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Planning the Initial and the Future Building Program*

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FEW persons realize the size and scope of the hospital building program in America. It has developed into one of the major divisions of the building industry. The size of the problem, its probable growth in the near future and its complexity will be considered in this article, the data for which were supplied by the statistical service of THE MODERN HOSPITAL.

In the last fifty years, there has been an increase of 841,622 in the number of hospital beds. It is, of course, impossible to compute the amount of money spent in the original construction and in the rehabilitation of a certain percentage of the construction. An exceedingly conservative estimate would place the figure in excess of three and one half billions of dollars. We cannot expect the same ratio of increase in new beds to continue. Fifty years ago, with hospitalization limited to special types of cases, the need for hospital beds was exceedingly meager. The present day practice of hospitalization for diagnosis, for maternity work, for the control of therapy and for the great increase in surgical cases was unthought of. There is, however, a fairly sound basis for computing the expectancy of growth for the next few years.

Since 1918, there has been an increase of 7,984 beds, or approximately 790 beds a year. It seems fair to establish this number as a normal ratio of increase. That it is a fairly accurate estimate is substantiated by a leading architectural authority who estimates that between three and three and one half millions of dollars a year are spent for new hospital buildings. The same authority is responsible for the statement that the average life of an institutional building is twenty-five years. In order to err on the side of conservatism, this estimate is advanced to thirty-five years. But we must keep in mind the fact that the ratio of obsolescence in hospital buildings is much higher than in other types of buildings and that it is the greatest element of capital expenditure, outranking the depreciation item.

Annual Bed Replacement Is Great

If an average life of thirty-five years is accepted as a basis of discussion, it is readily conceivable that if the growth in hospital construction continues in increasing ratio for the next few years, there will be need to replace a large percentage of the 840,000 odd beds already mentioned. We may, therefore, expect an annual replacement program of not less than 25,000 beds within the next few years, aside from the demand for new beds that unquestionably will continue.

The building of a hospital to-day is not as simple as it was even twenty-five years ago. The demands of service are more complex; the need for space other than that actually occupied by patients is becoming increasingly greater; the cubic cost of hospital buildings has increased in proportion to the increase in building costs in other lines, so that the normal volume of building plus the replacement volume, plus the increased cost per patient bed has produced a stupendous building need for American hospitals.

*This is the first of three articles by Mr. Chapman on the development of the hospital building program.

It is with this large and increasingly larger field, not only in terms of dollars and cents but in terms of a better and higher type of service to the patient, that the subject matter of this article is concerned.

Another aspect needs consideration. The statement is ventured that not more than 10 per cent of hospitals built in America are adequately financed. The needs of the institution in most instances far exceed its finances. This frequently necessitates a curtailment of the building program, and even in those instances that promise a realization of the complete program there is the necessity for the closest scrutiny of plans and specifications in order to provide for the operating institution as many of its requirements as possible. When the building program is consummated, the funds frequently are completely exhausted. No amount is set aside for internal changes, depreciation and obsolescence, such as is the accepted practice in industrial operation. As a result the hospital must suffer for indeterminate periods of time for mistakes in planning.

Safeguarding the Public's Expenditures

Another point worth mentioning is the character of the financial program. In most instances, hospitals are built through the generosity of the citizens of a community. The completed institution stands as a memorial to the unselfishness of large groups of people, motivated by a desire to be of service. The obligation of safeguarding the expenditure of such funds is a sacred one, much more sacred than the expenditure of personal funds, and expenditures should be conserved by careful planning.

The operation of the modern hospital is a complex problem. Its ramifications touch every aspect of our social and economic structure. It calls upon and uses practically every type of activity that modern civilization deems essential. A large ratio of the operating expense of the hospital is expense of personnel. Conservation of that personnel is prerequisite to efficiency in the rendering of service to the man, woman or child entrusted to its care. There is a change in the conception of hospital practice. To-day the hospital is recognized as the health center of its community, obligating itself to furnish all known means for the scientific diagnosis and treatment of disease; responsible to its community to supplement and complement the services of the clinician in modern diagnosis and therapy. If the hospital is to be efficient, not only to-day but in the days, months and years to come, there must be a philosophy of planning, looking far into the future. No one individual or group is so farseeing or wise as even to approximate an estimate of all the hospital's needs, but wise planners will recognize that evolutionary as well as revolutionary changes are a natural result of growth and development and will so plan the physical plant that areas assigned for one purpose may be changed to meet other needs with the least possible expense.

The preceding paragraphs have attempted to show the volume and the complexities of the problem. The matter has been dwelt upon in considerable detail in order to impress all with its immensity.

In a discussion of the development of a hospital plan, one must first recognize the almost revolutionary changes that have come about in the type of service rendered by the hospital. Not so many years ago, hospitals were in a large measure organizations that merely furnished bed facilities for patients. They accepted in no sense of the word the functions of the modern hospital. To-day the properly organized and functioning hospital must accept as a fundamental principle that it is the health center of the community it serves; that it must supply every known means for the diagnosis and treatment of disease; that its facilities shall be inclusive of all the various types of personnel and apparatus incident thereto; that it shall by its example inculcate in the minds of the community a higher type of health service. The acceptance of such an obligation produces a complexity of activities and problems far beyond the vision of the majority of our health administrators of a few years ago, and not accepted in their fullest extent by many to-day.

Basic Functions of a Hospital

The present day community hospital has four basic functions:

First, and of course paramount, is the care of the patient. This point must be uppermost in the minds of those evolving the plans.

Second, but by no means a secondary function, is that of teaching. The hospital must accept as an integral part of its responsibility the training of health workers; it must aid in the development of young medical men, supply the means of training well equipped student nurses and develop properly equipped dietitians, laboratory workers and technicians of various types. All these are a part of a big program of health conservation.

The third function is the study of disease. The establishment of new truths in medicine and the reestablishment or refinement of old truths are just as important an aspect of the modern hospital's work as is the care of patients. At no other point in our social structure is the opportunity presented to observe groups of patients

with comparable diseases. It is here that the clinician, by keen observation, can control, check and properly evaluate clinician procedures. It is here under a common motivation that the clinician and laboratory man meet in the devising of improved methods of procedure. The hospital must accept this sacred obligation to posterity.

The fourth function, and one that is not quite so easily realized, is the prevention of disease. Knowledge and experience have demonstrated that many diseases can be completely eradicated. The span of life has been increased not so much by an increasing longevity but by a decrease in infant mortality by properly educating expectant mothers and by applying sound methods to the care of the infant. The hospital can and should lend its aid to this important program. It can do it with its patients, with its doctors, with its nurses and with its other health workers.

Developing the Building Program

Let us now proceed to a discussion of an orderly approach to the development of a hospital building program. There is no such thing as a standardized hospital. While it is true that there are units within all hospitals that may be, and are typical, and while the experience of others will dictate certain solutions to the problems presented, still each community offers a separate problem, and each program of development in that community offers a problem that can be met only by an intelligent, experienced analysis of the needs of the community and of the individual institution.

What are some of these problems that present themselves for solution? We shall enumerate seven. They are not all-inclusive but they are basic and must be answered before an intelligent program can be developed.

1. If the contemplated hospital is to be successful, it must be developed in the face of a need, rather than because some one individual or a group of individuals for personal reasons desires to project just another institution into the community. An analysis must be made not only of existing hospital beds but of the need for additional beds. Habits of practice in the surrounding rural districts as well as all phases of professional habit in the community must be taken into consideration.

2. This aspect of the study is an evaluation of the character of beds. Do the medical men of the community hospitalize their maternity work? Is there a pediatric demand? Is there a large industrial demand?• Economic conditions must be considered. The clientele of the prospective clinical staff will establish an approximate ratio of facilities for private and semiprivate patients.

3. Policy of operation may not seem pertinent in a preliminary discussion of a building program, but it is absolutely prerequisite to an understanding of the operating problem, and any building program must be developed with the operating hospital uppermost in mind. Is the hospital to be an open or a closed staff hospital? Is it to be a general or a special hospital and, if general, are there to be provisions for isolation facilities? These are but a few of the questions that come under this general heading.

4. Is the hospital to operate an out-patient department? Is this out-patient department to be pay, part-pay or free, or a combination of all of these types? If it is to be a free and part-pay clinic, will there be a sufficient number of beds in the hospital to accommodate the need of the out-patient staff and of its clientele?

5. The size of the ultimate hospital and the size of the present program must be determined and a well defined policy of expansion established.

6. Is the hospital to adopt a policy of housing its personnel or is it going to follow present day trends and not furnish these facilities? In other words, is there going to be a nurses' home, a building for domestics, male and female, and the recreational facilities that are a part of such developments, or is there going to be only a nurses' home, with other members of the personnel required to maintain themselves?

7. Last, but by no means least, what is the financial program of the operating hospital to be? When the institution has been built, are there to be sufficient funds from the earnings from patients and from subsidy to operate it properly? The country is dotted with institutions developed without any conception of their operating problem, with magnificent buildings but without funds to operate or maintain these buildings.

These are but some of the high spots that must be studied and analyzed in the development program.

Technical Advisers Are Necessary

It is to be assumed that the group supporting the building program is composed of representative members of the community, interested in the development of facilities of service, but with no specific technical training. It seems proper, therefore, to suggest that in so complex a problem as the development of a hospital, qualified technical advisers are perhaps the cheapest type of expense that can be incurred. Future generations in a large measure will gauge the efficiency of the physical plant by its errors in plan-

ning. They will not be inclined to credit many of the good points, but will emphasize the failures. The best planning and the most competent advice will not produce a perfect plant, but it is equally true that without sound advice, without competent architects, consultants and engineers, the operating hospital will present almost insurmountable difficulties and problems of administration.

If those who are responsible for the planning of the institution are to reap the fullest benefit from these advisers, it is essential that they be selected early in the program in order that their judgment may be solicited on every phase of the program, and that they in turn may have the benefit of such information as may be developed from time to time in conferences and in analyses.

The selection of an architect must be given careful consideration and must be based on his ability rather than upon political or social preferment. He should be the medium of expressing the operating needs through plans and specifications, and should supervise the construction on sound, economical and efficient lines. He should not be expected to interpret operating needs. After all, an architect is not competent to evaluate the operating needs of a bank, a factory or a warehouse. Why should a hospital be the exception? Each operating problem may be evaluated only by one who is competent to administer the problem. The administrator may not be competent to express his needs in terms of plans and specifications, but he should be competent to outline the operating problem to the architect who will in turn express these needs in physical buildings.

Hospital Construction Is Complex

There is always a discussion as to the employment of the so-called "hospital architects." The term is a misnomer. There are certain architects who have built many hospitals, and who by reason of their experience have a knowledge of individual institutions, but this in no sense of the word qualifies them to evaluate operating needs. Without a study of the individual hospital and of its potential operating problem, made by an individual or individuals who by experience are qualified to evaluate operating hospital needs, no one can plan the hospital building program.

The average hospital building is perhaps the most complex building program that is known to the building industry to-day, by reason of the large amount of mechanical equipment in the building. The high ratio of electrical installation, the plumbing, the ventilation, the atypical problems of illumination, all produce definite problems, and an architect who is selected to plan a hospital building must have an exceptionally well qualified engineering service within his organization. It is desired to qualify the term, "within his organization." The architect of necessity must be the coordinator of all planning activities. It appears logical that this coordination could be accomplished more easily with engineers as an integral part of an architect's organization. This does not imply that architects who as a matter of practice employ outside engineering services cannot render a high type of architectural service.

Local Conditions Must Be Studied

Another moot question is the propriety of the employment of a local or an out-of-town architect. The more competent of the two is the individual to be employed. There are conditions that as a matter of policy warrant the employment of a local firm, and certainly, all things being equal, it seems that local talent should be employed. This, however, should never be done at a sacrifice of competent service. In evaluating this one feature, one must not lose sight of the fact that a knowledge of local conditions possessed by the local architects may be the means of effecting material savings.

Many boards of trustees ask the question: "Do we need a consultant?" They say: "We have a superintendent who knows our problems, whom we can rely upon and in whom we have confidence. Why should we go out into the byways and employ a consultant who does not know our problem?" Many of us are so close to our individual problems that we cannot develop a broad perspective. Often the point of view of an outsider, even if he lacks the intimate understanding, but has a sufficiently broad training and experience to grasp the problem, may be of value and in fact generally is.

Another point to be considered: Is the superintendent who, we shall say, is qualified to visualize the problem, able to translate it in terms of blue prints? There are few of us who think in terms of dimensions. The saving of six inches in one room multiplied by many rooms, will go a long way towards paying the cost of the adviser, and more important still will conserve funds for the supplying of essential services.

What are the functions of a consultant? He is not an engineer, an architect or a draftsman. He must have a working knowledge of the architect's, the engineer's and the draftsman's activities, but certainly he is not qualified by training or experience to carry the ultimate responsibility in any one of them. He is a production engineer, em-

ployed to crystallize the operating needs of the hospital on behalf of the board of trustees of the institution; to act as the representative of the board and as a liaison officer in evaluating and expressing needs to the architect and in interpreting the efficiency of the plans produced. The institution must be planned with the operating point of view paramount at all times. Architectural fitness and the esthetics of the development must be subservient. There is no need to develop an architectural monstrosity; an intelligent interpretation of operating needs can be expressed in an architectural masterpiece.

In order to interpret these needs, the consultant must be one who has successfully managed a hospital, and preferably one who has managed several types of hospitals. In any event, he must be an individual who has had experience in varied phases of health activity, one who has a broad concept of the entire problem of community health work. The ideal consultant is an individual with vision, one who can meet professional and lay groups easily and who can guide them in the development of ideas and explain to them various plans proposed. He must be able to express himself in dimensions and to visualize to interested groups the ultimate plan; he must be open-minded in analyzing the problem, with sufficient stamina to adhere to sound planning. The value of a competent consultant is not debatable. Two eminent architectural firms, both of which have had an unusually varied experience in hospital construction, will not attempt to plan a hospital program without the assistance of a consultant.

Tell the Story to the Public

It is necessary to acquaint the community with the steps in the program, in order to sell the hospital idea to the community, and to obtain all the information pertinent to its development. This necessitates the holding of many meetings. These meetings in general are divided into two major groups—one designed for propaganda purposes and the other designed for the securing of information with which to aid in the development. The extent of the first group is predicated in a large measure upon how widespread the appeal for funds is to be and upon the board of trustees' interpretation of the need for selling the hospital idea to the community. These propaganda meetings should be planned after a fair conception of the type of institution has been developed, and should concentrate on service clubs, church groups, chambers of commerce, academies of medicine and groups of a comparable type. Such meetings have a definite place in the development of any community hospital program. They should be planned intelligently and conducted by individuals qualified to answer questions.

The second type of meeting should concentrate on professional groups—the physician, the nurse and the organized health agencies. These are the groups that will bring pertinent information to aid in the development of the program.

Selecting the Site

There comes a time when acts and not words are indicated. When that time comes, when the attempt has been made to sell the hospital idea to the community and when information of a general nature has been obtained from various groups in the community, the authority for the development of specific plans and specifications must be centered in a small committee—the smaller the better. This does not obviate the necessity of reporting progress to interested groups or individuals, but it does suggest the elimination of multitudinous changes that are bound to develop if the scheme does not contemplate a concentration of authority for planning.

Up to this point the ideas set forth have been rather general. These general ideas must be crystallized into specific action. When the approximate future needs of the ultimate hospital and the size of the present building to be erected have been determined, it is necessary to select a site.

The geographical location of the hospital, particularly in large communities, will have a direct bearing upon the future efficiency of the institution. It is urged, therefore, that every possible medium of information be used in correctly locating the institution geographically. It must be remembered, too, that the future of the community is as important as the immediate present. Population trends and potential future nuisances must be kept in mind.

The following points are submitted for consideration:

1. The geographical distribution of the present number of hospital beds must be analyzed. There is a tendency in many communities to concentrate hospital building in a relatively small area, leaving large areas indifferently served. This is a mistake. Illustrative of the importance of evaluating the community need is the location of a hospital dependent on industrial work, close to such activity.

2. Adequacy of site, particularly with reference to future needs, must be considered. Inadequate provision for future development has compelled numberless institutions throughout the

country to expand in a manner that seems illogical.

3. The environment of the hospital is important. It is not always possible to get an ideal environment in large metropolitan areas, but certainly the locations of many existing hospitals do not evidence a particular attention to this rather important element.

4. The presence or absence of nuisances produced by smoke, odors and excessive noise must, of course, enter into the evaluation of the site.

5. The question of an adequate water supply and of adequate facilities for sewage disposal must be seriously considered.

6. The relationship of the prospective hospital to main arteries of travel is important. The hospital need not necessarily be upon a main line of the street car system, but it should be easily accessible to such a car line. It is sometimes said that everybody rides in automobiles to-day and that this element is not important. Such, however, is not the case. The desirability of such an available means of transportation, not only from the standpoint of visitors but from the standpoint of the personnel, is important.

7. Since the hospital is primarily for the patients, every consideration should be given to the comfort of that patient. There are still other factors to be considered, however. The convenience of the attending physician must be given careful thought. The proper location of the institution will automatically stimulate a more intimate and frequent contact by the clinician, which is to be desired.

8. It is also essential that the convenience of visitors be considered. The handling of visitors in an institution is a major problem. Properly controlled visiting has a very definite therapeutic value. An inaccessible hospital will produce continuous adverse comment in the community, and this should be reduced to a minimum by all possible means.

Problems of Prescribing Drugs to Hospital Patients

Problems arising from the prescription of drugs to hospital patients were discussed by physicians and by hospital pharmacists at a special meeting of the Congress on Medical Education and Hospitals of the American Medical Association.

Dr. Ernest E. Irons, dean, Rush Medical College of the University of Chicago, said that a material saving in the cost of hospital care might be made by using standard drugs instead of proprietary drugs, which are nearly always more expensive, yet no more effective.

"The shelves in some hospital pharmacies remind one of the exhibits of proprietary medicines in a chain-drug-soda fountain-lunch room," Doctor Irons said.

Advertising plays an important part in the situation, Doctor Irons pointed out. Manufacturers often give a catchy name to simple standard drugs or mixtures of them and by insistent advertising with startling claims increase their use for a time. The physician, like every one else, becomes familiar with the drug under the proprietary name and prescribes it, although it is sold at a higher price than the same drug under its official name.

The evils of using proprietary drugs do not arise from the mere sale of a drug under a coined name, however, but from the misleading claims so frequently made. The council on pharmacy and chemistry of the American Medical Association insists that coined names of drugs must reflect the composition of the product and that unsupported claims must not be made in regard to such products.

How Church and Hospital Properties Compare in Value

There are more than thirty times as many churches in the United States as there are hospitals, but the amount of money invested in the buildings and equipment of the 8,000 hospitals and the 232,000 churches is nearly the same.

This and other figures of interest are drawn from a U. S. Government census of churches made for the year 1926, but only recently published and summarized in a little book published by the Institute of Social and Religious Research, "The U. S. Looks at Its Churches." "The value of church edifices alone, not including such items as pastors' residences, investment property, school buildings and hospitals, is reported as $3,800,000,000," says the author. This is a slightly larger figure than the probable capital investment in the land, buildings and equipment of the hospitals of the country. In annual expenditure, the sums laid out for the support of local churches is reported as $817,000,000 in 1926 which is close to the probable total expenditure for the maintenance of all our hospitals.

The hospitals of the United States are roughly estimated to receive some ten million patients a year, while the U. S. Census estimates the memberships of all the churches together as 44,383,000, including only those persons over thirteen years of age. Hospitals are particularly scarce in rural districts, but churches are especially numerous there, in proportion to population, although they are small in size. In cities of 25,000 and over there is slightly more than one church to each thousand residents, while in the smaller towns and rural districts this number is less than 240. There are relatively few different kinds of hospitals, but there are 212 different church denominations, although the census figures make manifest that twenty-four denominations include 91 per cent of the church membership.

Hospitals have grown during the last twenty years in actual number and number of beds and in both these respects have increased much more rapidly than the population. The U. S. Census report shows that the proportion of adult church members to populations has remained stationary from 1906 to 1926; it was 44 per cent in both years. Nurse training schools in hospitals have approximately 60,000 students, but Sunday schools in churches report 21,000 pupils. The salaries of the ministers of the church also average much lower than those of the administrators of the hospital.

Where Sun Cure and Work Cure Are Successfully Combined

By DR. A. ROLLIER
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FOR the last twenty years, in our treatment of cases of surgical tuberculosis, the sun cure has been supplemented by the work cure. The experiments that we made in our popular clinics in Leysin, Switzerland, were so conclusive that we decided to institute a means of applying them by creating a factory clinic.

This clinic is intended for needy patients of both sexes, without regard to nationality, who will benefit by a technical organization providing hygienic and remunerative industrial work. The idea of applying a work cure to bedridden patients might at first seem paradoxical. We shall be asked how it is possible methodically to introduce regular activity into the course of treatment of patients suffering from such serious diseases as tuberculosis of the spine, the hip, the knee or the peritoneum, where immobilization is generally considered fundamentally important. Experience, however, has proved that manual work combined with heliotherapy carefully prescribed, not only does not interfere with the treatment of these patients but actually hastens their recovery.

Let me briefly tell how we have come to accept this belief. Surgical tuberculosis, a disease of long duration, almost invariably attacks not only the patient's body but also his spirit. In tuberculosis more than in any other illness, successful treatment is, up to a certain point, a question of mental power, and the patient must have the "will to get well."

Frequently the patients who come to our clinics have been discouraged by the failure of previous treatment and have lost all faith in the possibility of cure. Worst of all, they have ceased to have the will to get well.

The influence of heliotherapy on the minds of the patients is striking. After a few weeks of sun cure, in proportion as they improve physically, so they improve mentally and hope is revived. The beneficial light of the sun, in winter as well as in summer, the tonic and bracing air of high altitudes, bring to all a profound and inward satisfaction and a deep sense of well-being.

But even in the mountains the sun does not always shine, and even the radiant light is not always sufficient to maintain the morale of the indigent patient who arrives discouraged through having been obliged to interrupt his work, sick in soul as well as in body, tormented as he thinks of his home deprived of the head of the family and faced by financial difficulties. It is to raise the morale of these invalids whose trouble is twofold and to bring them pecuniary assistance that we have instituted this work cure, which has the advantage over the sun cure in that it can be carried out in all kinds of weather. From the very first, it has been a valuable complement to heliotherapy in all our popular clinics.

Work an Adjunct of Treatment

Work is, incontestably, an essential condition of normal life and happiness. It is a law, natural and social, that can never be broken with impunity. The invalid who has to give up work becomes a prey to boredom and his mind soon suffers greatly from this condition. Convinced of this action of the mind on the physique, we have sought to improve the morale of our patients by providing healthy occupation for them.

Study is an excellent adjunct of treatment, particularly the study of languages, which here is carried out easily and at little expense, thanks to the number of strangers from other lands who come to our clinics. But study must be pursued in moderation in order that the invalids may not quickly become satiated or run the risk of being intellectually overworked. Reading may be a good form of recreation, but it allows the mind to slip readily into idleness; it is a passive occupation, and the tuberculous invalid too often quickly tires of serious works and falls under the demoralizing influence of bad literature.

For this reason we thought it well to associate intellectual work with hygienic and easy manual work. The latter, which is individualized and methodically applied, proved to be a therapeutic agent threefold in value: physical, moral and social.

Like the sun cure, the work cure is but a return to a natural law, and the organism soon improves remarkably. Manual work is of primary importance, both as a physiologic factor, for it stimulates the blood circulation and the defenses of the organism, and as a psychic factor, for it removes the crushing sense of uselessness from the mind of the patient.

Our surgical tuberculous patients, given work suited to their individual needs, soon become aware of a steady return of their powers and experience the encouraging sensation that accompanies the normal functioning of their organs and the adaptation of the human machine to work. From the day when the patient, emerging from the apathy by which he was about to be overcome, sets himself courageously to work, the necessary collaboration of brain and muscle constitutes for him the most valuable diversion; his mood changes, while by a normal reaction his physical condition improves. The invalid worker soon ceases to suffer from a sense of uselessness. He gets back the idea of his worth and the ennobling effect of work makes him rise in his own estimation.

Our first attempt at instituting the work cure was made in 1909 when in collaboration with Pastor Hoffet and under the patronage of the League of Vaud against Tuberculosis, we started the work colony at Leysin. Its purpose was to provide our needy convalescents with easy work, such as making baskets, cane furniture and wood work, which was also sufficiently remunerative to allow them to complete their cure in the mountains. This healthy work was carried out on balconies in the fresh air and sunshine or in a spacious workshop when the weather was bad.

The excellent results of this treatment encouraged us to introduce it more and more in our popular clinics and to apply it not only to convalescents but to bedridden patients suffering from surgical tuberculosis.

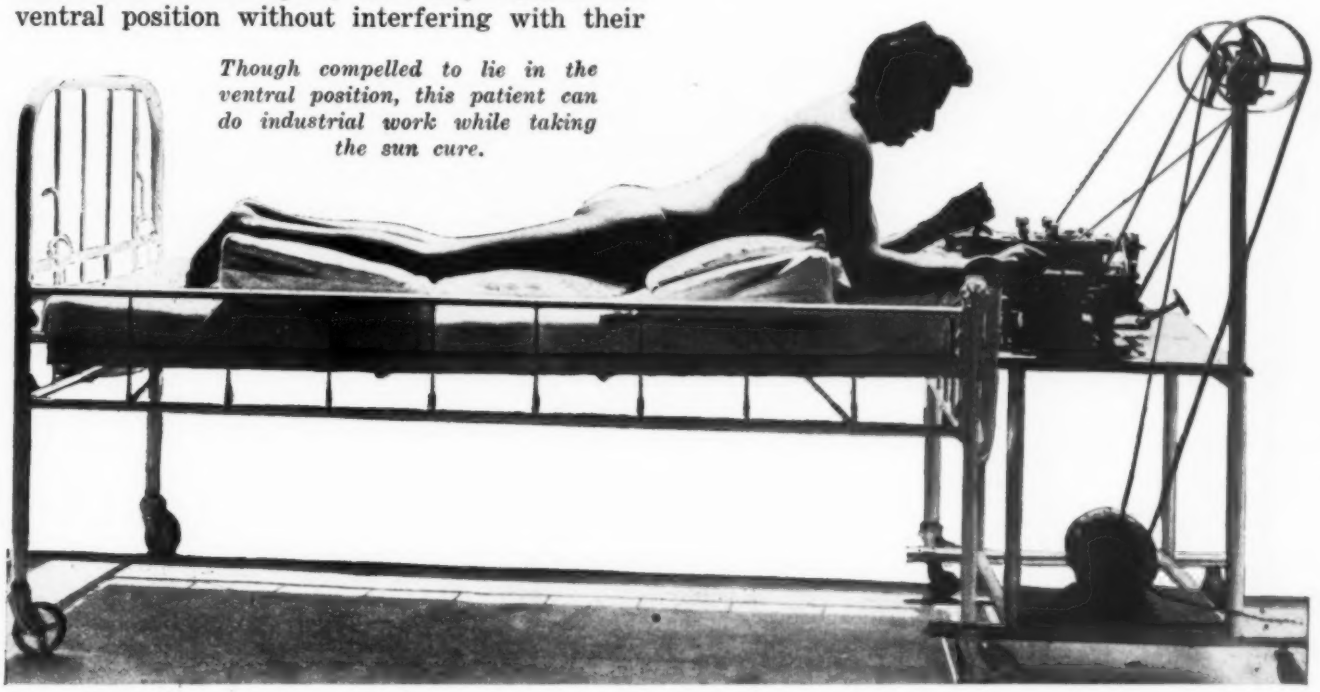
How the Industry Has Developed

We gained experience in this method of treatment during the World War at the Swiss Military Clinic in Leysin which we organized in 1915, with the collaboration of Lieutenant P. Junod, who at present is the technical director of our international factory clinic. A trained technician with the inventor's spirit, though ill and confined to bed he realized from the first the value of the work cure.

Our patients, most of whom had surgical tuberculosis, began by making simple articles, such as string bags, hammocks, rugs, baskets and carved wood ornaments, since the facilities were at first, of necessity, makeshift, and the difficulties of sale great. This work developed so rapidly (more than eighty different kinds of articles were made) that the workshops were soon in-

adequate, and an annex for convalescents was built, containing large workshops where they could work at ease in spacious, sunny balconies or indoors if the weather was bad. The salary of the workman was based on the difference between the sale price and the cost of materials, after a deduction of 10 per cent was made for the upkeep of tools and machinery and for a special monthly payment for comrades too ill to work.

Certain patients, such as those suffering from tuberculosis of the spine, can easily work in the ventral position without interfering with their recovery. With a cushion under the chest and the elbows on the mattress, the hands are left free and the patient can use them during the long hours when the back and body are being exposed to the sun. A special arrangement allows the invalid with tuberculosis of the hip to work on his back without moving the coxo-femoral joint.



Though compelled to lie in the ventral position, this patient can do industrial work while taking the sun cure.

The work cure has not only proved an important therapeutic factor, but has also brought considerable financial assistance to our patients. During the years 1918-19 alone, the Swiss Soldiers Cooperative of Leysin sold goods valued at frs. 62,190.

To facilitate the sale of the work we attempted to vary the articles produced. As the workers became both numerous and keen, the articles made accumulated so rapidly that it was difficult to find a market for them. It became urgently necessary to dispose of the stock, and we therefore decided to hold a general sale at Leysin at the beginning of each year, the proceeds from which were as follows: in 1926, frs. 10,000 ($2,000); in 1927, frs. 12,000 ($2,400); in 1928, frs. 13,000 ($2,600); in 1929, frs. 15,300 ($3,060). These sums divided among the workers are for them the best of stimulants. They receive the whole amount realized by the sale of the articles they have made less the cost of matrials.

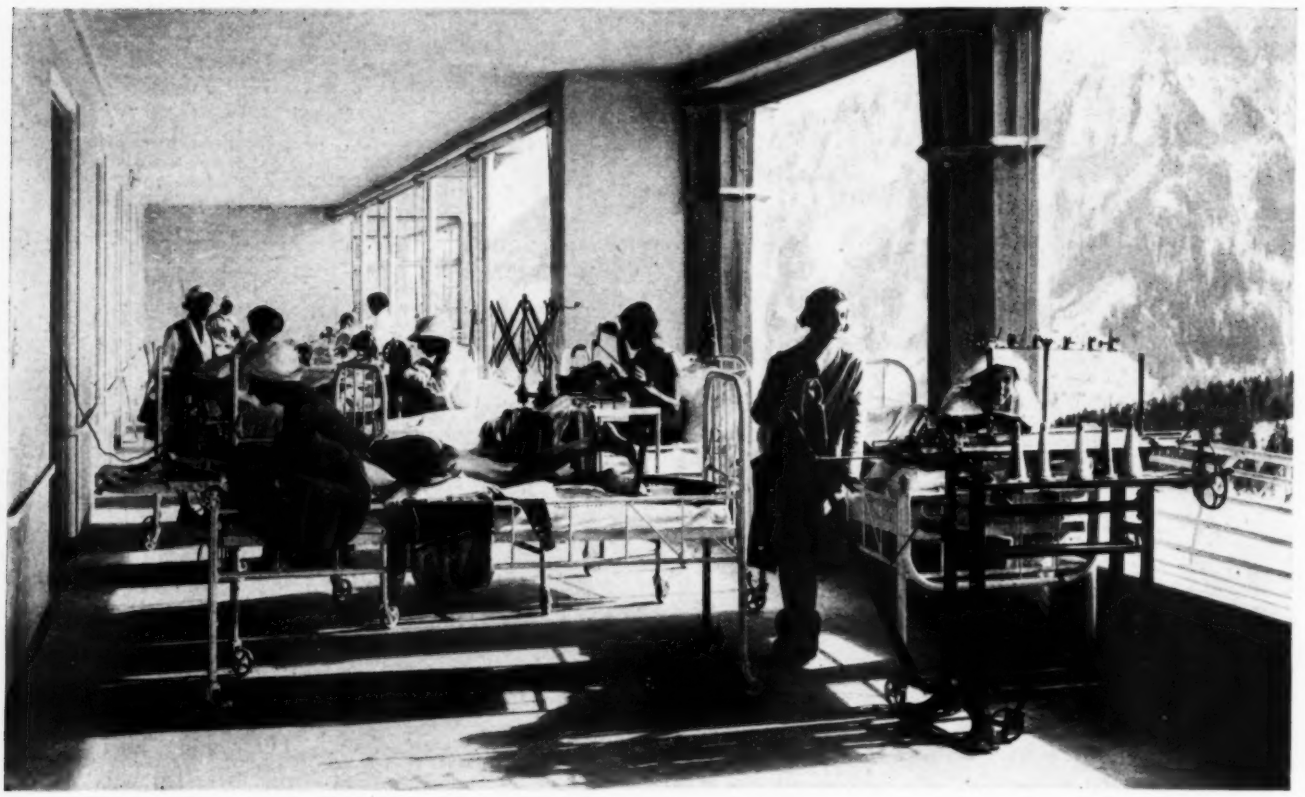
As the work cure was given to more and more of the patients in our clinics, it became necessary to organize it on a larger scale and particularly to establish a system that would ensure a regular and methodical sale of the work turned out.

It was then that we decided to create a real factory, technically organized, where the work would be systematically arranged and where we should no longer be continually confronted with the problem of how to dispose of the manufactured articles which on leaving our workshops would be delivered direct to the firms that had ordered them.

These conditions are fully realized in our international factory clinic, which was opened on February 1, 1930, and which contains 120 beds, combining the facilities of a model clinic and a model factory.

Here, patients suffering from surgical tuberculosis enjoy the advantages of an improved modern technical organization that allows them to earn part of their upkeep by doing industrial work that is easy, hygienic and remunerative.

This medicosocial undertaking is installed in a building that dominates Leysin village and is in immediate proximity to Leysin-Feydey station. Its architectural lines are imposing but subdued.



The patients on one of the women's balconies, shown here, are using sewing machines and knitting machines.

The building was designed by G. Epitaux, architect of the International Labor Bureau. At first glance it gives an indication of its destined purpose, the alliance of the air and sun cure with the work cure.

The building, which is about 200 feet long and about 100 feet high comprises two basements, a ground floor and four principal floors, which extend southward into spacious balconies, nearly 9 feet wide, fully exposed to the sun. These balconies are on a level with the wards and the patients' rooms, with which they communicate. The wards are well lighted by wide glass doors and are rendered still more cheerful by the washable paint in different shades of a warm yellow, which covers the walls and ceilings. The cubic space of air has been generously treated. Wards containing seven beds dispose of 80 cubic meters; those of five beds, 42 cubic meters; those of three beds, 27 cubic meters; those of two beds, 25 cubic meters. All the floors are covered with linoleum. Each ward and each room is supplied with hot and cold water, and every patient has his own cupboard.

One of the features of the factory clinic is the intramural electrical conduits in all the wards and patients' rooms, with a connection above each bed for the individual motors that the invalids use for their mechanical work. A similar installation has been provided in all of the balconies as well as in the solarium located on the roof.

The solarium has a superficial area of 1,040 square meters. Bedridden patients easily reach it by a lift. In addition to the electrical plugs for the motors the solarium is equipped with electric light, a telephone, running water and a small lift for dishes that communicates with the kitchen.

The object of this extensive electrical installation is to permit those invalids suffering from surgical tuberculosis who are confined to bed to continue their mechanical work by means of individual motors either in the wards or rooms when the weather is bad or on the adjacent balconies or the solarium while taking the sun cure. As all doorsills have been abolished and as the Rollier beds are fitted with ball bearing casters, they are easily wheeled inside or outside.

On the ground floor of the factory clinic are the spacious workshops with their great machines, fixed or movable, intended for the convalescents or for the patients who can work. The superficial area of the workshops is 100 square meters, and there is an adjacent terrace of 50 square meters. The large French windows are fitted with glass that allows the penetration of the ultraviolet rays of sunlight. On the ground floor are also the technical offices of the manager, the testing rooms, the storerooms and the receiving and forwarding rooms. The south-

west angle of the factory clinic comprises an annex fitted with the most modern inventions in the way of washing and laundering machines, drying cupboards, ironing outfits and linen presses.

In the northwest section of the building, a wing about 65 feet long by 35 feet wide is given up entirely to the dietary department. Rooms for storing vegetables and fruit and the pantries are in the basement. On the ground floor are the refectories for the staff, on the first floor the kitchens and on the second floor the dining rooms and their offices.

The kitchen is spacious, well lighted and airy, and is fitted with the latest improvements in culinary equipment. The cooking is done by steam in five great coppers, each with a capacity of 80 liters. The rational diet of our patients while they are undergoing the sun treatment consists principally of cereals, vegetables, fruit and natural milk foods, particularly those rich in vitamins and remineralizing elements.

Special facilities have been provided for cooking by steam, gas or electricity. No cooking is done by wood or coal.

In a room next to the kitchen there are lifts for conveying dishes and food to and from all floors and the solarium.

The dining room, with its many wide windows, is paneled in different shades of wood harmoniously blended. This room can be made larger or smaller by means of a simple movable partition that disappears into the wall. It is also used as an assembly room and as a cinema, since the projection of films has been provided for in an adjoining room.

The whole building is heated by hot water. The installation is fed by three boilers heated by a liquid combustible that comes directly from Leysin-Feydey station by special canalization directly into the basement, where it is stored in three reservoirs, of 11,000 liters capacity each. A fourth boiler supplies the hot water for the kitchen and for the wash basins in each ward.

About a dozen small rooms on the same level as the solarium have been set apart as laboratories. There, besides other laboratory work, the special research work that we have begun in regard to sun pigmentation will be continued.

On one of the lower floors are the administrative offices which communicate with the reception rooms and the main entrance of the building. The whole of this floor is reserved for the commercial school where young patients will have the advantage of theoretical and practical instruction and will be able to obtain a certificate. There will be evening courses in languages.

Sun cure and work cure—a woman patient at the factory clinic manipulates a knitting machine especially constructed for this type of therapy.

Each floor has been laid out to ensure a maximum of insolation in all of the inhabited premises. The north side of the building contains the pharmacy, the bathrooms, which are large enough to permit the invalids to be wheeled there in their beds, the consultation rooms, the rooms for dressings and orthopedic appliances and the lavatories and water-closets.

The fixed installations mentioned earlier in the article, such as the intramural electrical conduits and the electrical plugs, with which the wards, rooms, balconies and solarium are furnished, have their essential complement in the special construction of the beds. The bedrail near the patient's head can be turned over to form a small bench on which can be placed the individual motor as well as the machines or tools that the patient may need to carry on his work.

Meeting the Problems

The realization of our scheme for a factory clinic created three great problems: (1) the selection of the activities to be offered to the patient; (2) the adaptation of the tools to the various clinical cases, and (3) the continuance of work regardless of the atmospheric conditions.

The first problem was the most difficult to solve because most of our patients are confined to bed during treatment. It was necessary therefore to limit ourselves to the manufacture of small articles and to such crafts as call for a minimum of physical effort. Our invalid workmen can undertake light mechanical tasks, the finishing of small articles, punching and piercing, the making of screws, the manufacture of spare parts for instruments and watches, and the boring of stones. The women can manipulate knitting machines, do needlework and make various small objects. The support and advice of numerous business men and manufacturers have enabled us to enlarge the industrial possibilities of the clinic while at the same time keeping within the bounds imposed by the faculty.

Patients Are Sure of Earning

The nature of the industrial work undertaken by our patients meets all the demands of hygiene and necessitates little expenditure of muscular effort. After serving a short apprenticeship, the patients are sure of earning something every day, which will enable them to contribute to their maintenance without jeopardizing the success of their heliotherapeutic and orthopedic treatment. Because of the way in which the factory clinic has been organized, its products can be made and delivered at exactly the same price as those on the industrial market.

The solution of the second problem, the adaptation of tools to the physical condition of the patients, was made much easier by the experience in the work cure that we had gained during the course of twenty-five years' medical activity in Leysin, our orthopedic appliances having always made it possible for the invalids to undertake manual work provided they had at least one well hand.

As to the third point, the continuance of work in all weather, this has been provided for by having as many electrical installations in the wards as on the galleries.

We must again stress the fact that the work cure is, and must always remain, an adjuvant to the sun cure; it is never therefore allowed to become a source of fatigue, which might hinder the patient's progress. For this reason it is carefully prescribed according to the state of the subject, his progress, his general resistance and his particular aptitude. The patient works while taking his cure and as soon as he is on the road to recovery he can do a maximum of from four to six hours' work a day. For those who come directly to the factory clinic without having passed through our popular clinics, the manual work, though easy, requires a certain amount of practice. This work is also facilitated by the sun cure which quickly strengthens the muscular system of the invalid.

How the Technical Manager Functions

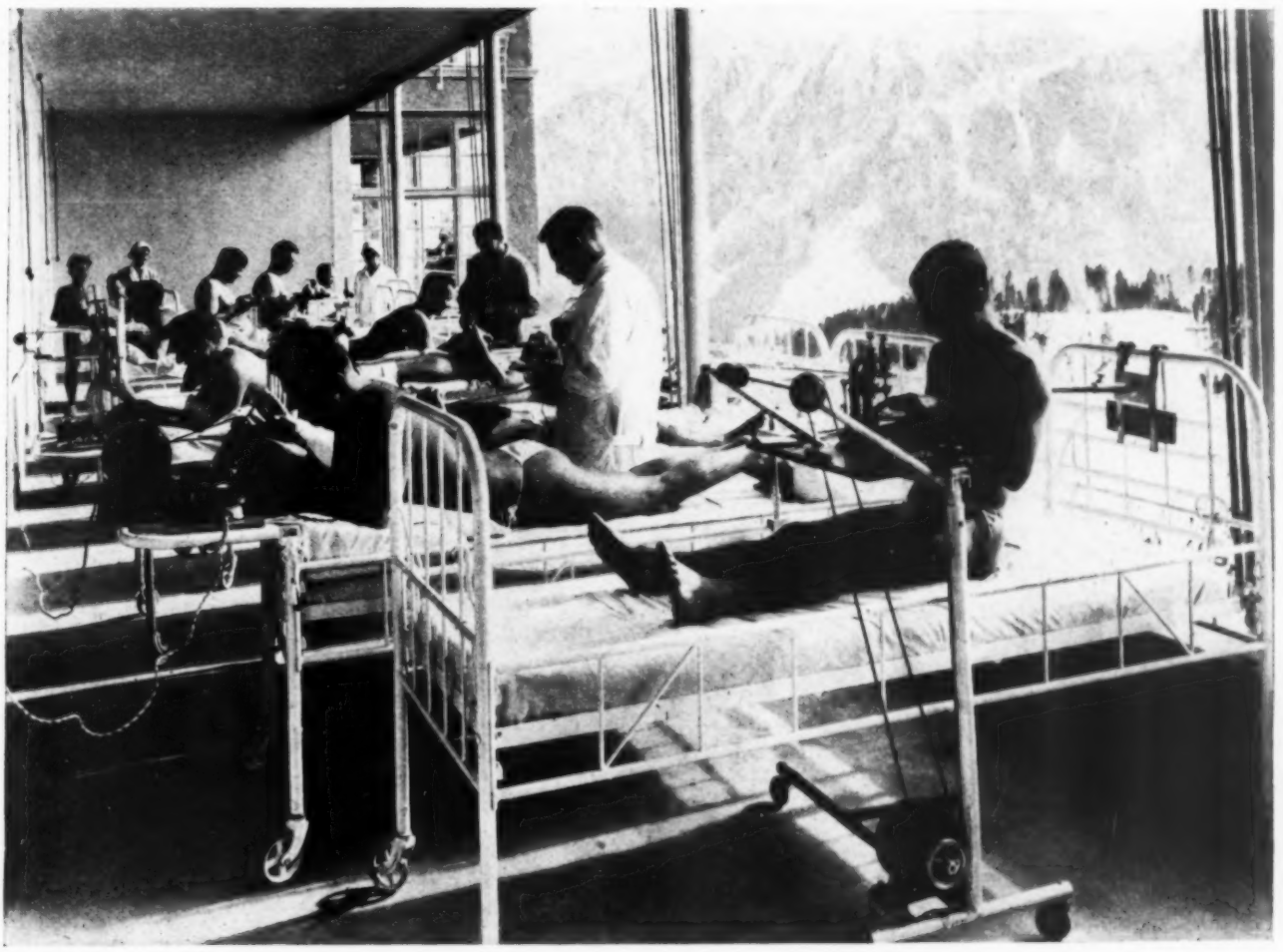
The assistance of Monsieur Junod, the technical manager of the factory clinic, makes it much easier for beginners to learn their work. Because of his experience at the Swiss Military Clinic during the war, he knows just what one may ask of patients suffering from surgical tuberculosis, and he is fully competent to direct their professional education. He keeps the factory clinic in touch with the business houses ordering goods. He supervises the execution of orders, the buying of raw materials and tools, the division of the work among the patients and the fixing of their wages.

Up to the present the technical management has dealt only with business houses in Switzerland so far as obtaining raw material and the disposal of finished goods are concerned. No doubt a time will come when it will be necessary to consider the possibilities of finding a market abroad for the disposal of the products. In this eventuality we shall be confronted with the difficulties that are bound to arise in connection with the customs duties. It will be necessary to try to obtain exemption from or a reduction of these duties, otherwise it is doubtful whether we

should ever be able to establish profitable business relations abroad. In any case the founding of the factory clinic has awakened only a feeble interest in foreign countries. However, we have not lost courage. As we make no distinction of nationality among the patients admitted, we feel we have the right to hope that foreign nations, especially those adjacent to Switzerland, will also become interested in this international undertaking.

The factory clinic was opened under favorable conditions and the prospects for the future are good. We are, however, confronted with the problem of obtaining regular orders that will allow us to keep our patients continually occupied. We earnestly hope that soon a larger number of factories will be in a position to grant us the collaboration that is indispensable to the success of our enterprise.

There is also another question that continues to occupy us. It is the financial side of the affair. The total cost of the establishment (construction, furnishing and industrial equipment) amounted to two million Swiss francs. About half of this sum has been paid, by gifts from friends of the clinic, approximately frs. 197,000; by the Confederation, which has promised us frs. 400,000 to 450,000 payable in annuities; finally, by our personal gift of frs. 400,000, which represents the cost of the ground and of the construction begun in 1914 and interrupted by the war. There remains, then, about one million francs to be raised. We are trying to meet this debt by subscriptions. Our greatest ambition is to reduce the price of board and lodging to a fairly low figure—five to six francs a day, for instance, so that the patient can earn the whole amount by his work.



These invalid workmen are performing light mechanical tasks, which are remunerative and do not interfere with the sun cure.

At the moment the entire cost of a patient's day amounts to about frs. 9, and we have not been able to make the price per day for board and lodging any lower than frs. 7.50 for Swiss subjects and frs. 8.25 for foreigners. The reason for this difference in price is that the Confederation grants to all philanthropic establishments that receive tuberculous cases a subsidy fixed every year by the federal service of public hygiene on the basis of the number of days of Swiss patients, with the addition of a small percentage on the working expenses.

With the present rates for board and lodging, we shall have to face a probable annual deficit of frs. 70,000 during the first years. Later on, an undertaking of so vast a scope ought to be self-supporting, with a reserve fund. As soon as time has proved the economic value of the medicosocial demonstration we have begun, we are sure to attain our object, with international financial help and good will.

Our patients come to us from various parts of the country, some directly from their homes, others from our popular clinics. Many will be sent us by antituberculosis leagues, by insurance companies and municipalities, organizations with which we shall be able to make definite financial arrangements. Our factory clinic will lighten their task in giving to the insured surgical tuberculous patients the means to escape the peril of inactivity, a danger to be feared as much as tuberculosis itself, and to earn all or part of the cost of their maintenance.

In this way the difficult and often distressing problem of the cure and the future of indigent patients suffering from surgical tuberculosis will be solved by the most rational means.

How Should the Hospital Treat the Private Duty Nurse?

What help should be given the private duty nurse who has been called for duty in a hospital, concerning the rules and regulations of that hospital? Frances M. Heinrich, R.N., Augustana Hospital School of Nursing, Chicago, lists points to be considered in this connection, in a paper read at the biannual nursing convention in Milwaukee:

1. If the nurse is a newcomer, she should be handed a printed list of rules.
2. Someone should be ready to direct the nurse to the patient, so that she does not lose valuable time or become embarrassed by wandering aimlessly about.
3. Adjustment of any difficulties that may be incurred by the nurse should be through the office of the superintendent of nurses if proper adjustment is not made through the floor supervisor.
4. Adjustment of complaints of patients, such as lack of courtesy or attention by any hospital employee.
5. Investigation and adjustment of any inability the nurse may have in obtaining necessary supplies from the service linen rooms or diet kitchen, if no satisfaction can be had from the floor supervisor.
6. Proper assignment of cases, with fairness to the patient as well as to the nurse.
7. Investigation of repeated refusal by nurses for certain types or location of patients.
8. Proper dressing room facilities, with adequate locker space, keys, the room to be well ventilated and not overcrowded.
9. Should a hospital feel privileged to register against certain nurses, these nurses should be given the benefit of a hearing before a representative committee made up of a member of the private duty section of the district association conducting the registry, a member of the hospital staff, a member of the alumnae of the hospital and a member of the alumnae to which the nurse belongs.
10. The hospital should be privileged to deal with a nurse who is spreading malicious gossip or criticism or who is not living up to the ethics and traditions of the profession.
11. If a certain nurse is desired by a patient, that nurse should be given the opportunity of accepting the call, regardless of her place on the registry, or whether she is a graduate of the hospital. If she happens to be on a case at the time she is requested, she should be given the privilege of talking with the patient, so that the patient may understand why the nurse cannot serve her.
12. Is it fair, when a patient can afford and is willing to retain a nurse, for the doctor to discharge that nurse? This happens fairly often.
13. The attitude of the floor supervisor and the students should be courteous, fair, firm and cooperative. As special nurses in most hospitals must give detailed written daily reports of their patients, is it necessary that the floor supervisor make frequent or infrequent calls to that patient's room? Would it not be better for that supervisor to take that time to follow up more closely the work of the student nurse in regard to the care of the general duty patient and ward routine? It should, however, be the duty of the floor supervisor to enforce the following: (a) quiet in corridors, rooms and at the chart desk; (b) conservation of hospital supplies; (c) neatness in the nurse's appearance; (d) tact in discussing the conduct or management of the staff with the student body.
14. A well balanced diet with pleasant surroundings and dining room service is every nurse's privilege and right. The night force, for example, too often is shown lack of consideration to needs and manner of service. Also, nurses having to follow special diets should, upon the recommendation of their physician, be accorded the privilege of being served such a diet through the diet kitchen.

Good Service Solves the Problem of Advertising

That from the first day to the last of a patient's stay in the hospital he should receive from every department, prompt, courteous and unselfish service, was set forth in a paper presented by E. G. Fulton, business manager, Glendale Sanitarium and Hospital, Glendale, Calif., at a hospital convention.

"Service is a matter of education," Mr. Fulton said, "and it should be so good that it will educate the patient to recommend others to come to the hospital. Good service solves the problem of advertising, and also the problem of the 'vacant bed.'

"It is possible even with the most scientifically equipped institution to fail to give adequate service, simply because the hospital in its effort to be perfect in the machinery of service has forgotten the true spirit of service. Long after a guest has ceased to think of the scientific appliances and smoothly working machinery of a modern hospital, he will remember the kindly human contacts that he has had with his physician, his nurse and other members of the hospital staff."

How Do You Meet These Problems?

Suggested possibilities for securing the greatest benefit from the annual convention of the American Hospital Association

EVERY industrial plant possesses its by-product as well as its major object of manufacture. Often the former assumes a not unimportant place in estimating the yearly gain as a result of the operation of the plant. Indeed the efficiency and the financial success of the organization are frequently measured in terms of the utilization of materials and opportunities hitherto wasted but now converted into some useful and income producing object.

The annual convocation of hospital executives possesses, of a certainty, a major objective and yet at the same time it offers certain definite opportunities for realizing vital ends that are not related to the official programs. To learn, to recreate; to recreate, but above all to learn. Such should be the motto of each administrator making the journey to New Orleans. What are the ends sought and the means thereto, one asks? Let us see!

Informal Discussions Are Valuable

The social mingling of hospital men and women is always delightfully stimulating. Here in the informal atmosphere of lobbies of hotels, of auditoriums or of exhibition halls gather those who speak and understand the common language, the Esperanto of those who have been granted the opportunity to minister to the sick. From these often impromptu, always informal and unabashed discussions of the homely problems of hospitals is likely to come the greatest good. Formal papers and floor round table discussions are always intellectually fruitful. But such interchange of thought and opinion must of necessity be characterized by a degree of inhibition seen not at all in group or private conversations. Nor do the exhibitors of hospital supplies and equipment fail to play a part in shaping this helpful intellectual by-path of information. Many very stimulating and fact producing conferences have taken place before the booths of an exhibitor, from which both executives and merchandiser have learned much.

As yet no person with a bent for statistics has endeavored to compute the number or evaluate the importance of all of the subjects concerning which the hospital executive must be informed. Some of the most outstanding of these are set down here. It is suggested that each superintendent singly or even doubly check those subjects of greatest interest to him or to her and having done this, set forth with a will to return not without a mental clarification of, if not a definite solution for, each puzzling problem.

And so there has been compiled a partial check list of suggested questions of all dimensions and viewed from many angles which the editors of THE MODERN HOSPITAL project as worthy subjects for many a "Talking It Over" informal discussion. On him or on her who knows the answers rests the responsibility to inform him or her who knows not.

Should members of the board of trustees be elected annually? If so, how can this best be brought about?

* * *

Should members of the board of trustees assume any administrative duties in the hospital and if so, what should be their limitations?

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Should there be any route by which members of the board of trustees may come in contact with members of the hospital's personnel except through the superintendent?

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How and by whom should the annual budget be prepared? Should this be on a monthly or an annual basis? What should the superintendent do when he is certain that the adopted budget will be inadequate to meet the hospital's need?

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What are the qualifications necessary for members of the board of trustees? Should professional, educational, business, religious or other community fields be represented in this body?

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As a general thing, what type of person can best fill the position of president of the board?

What should be the organization of the executive committee and its relationship to the board of trustees?

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Is it a wise organization of the board of trustees to provide for a number of vice-presidents, each being responsible for a hospital division or department?

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Is it possible to evolve a method of financing hospitals which is based on sounder economic principles than those now employed?

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How can the medical staff of the hospital and members of the board of trustees be brought in closer cooperation and harmony?

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When occupancy figures are low and income lags, has the board of trustees a right to insist that staff physicians send the majority of their private patients to their institution?

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Has the time arrived when a limitation of the number of hospital places held by staff physicians shall be definitely set? What shall be done with the distinguished surgeon holding a staff place who, owning his own hospital, refers only ward patients to the hospitals on whose staff roster his name appears?

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Should there be a chief of staff of each hospital department? If so, what should be his relationship to other major members of his staff?

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How can the medical executive committee of the staff be best organized? How should its members be elected? How often should it meet? What should be the subjects discussed and what are its relationships to the staff and board of trustees?

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Should the medical director of the hospital be a member of the executive committee and of the board of trustees?

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Should it tend to produce dissatisfaction in the minds of members of the staff if all communications to the board of trustees are required to proceed through the medical executive committee?

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What type of disciplinary action should be taken when members of the staff persistently refuse to obey rules covering the establishment of quarantines; length of time required for scrubbing in the operating room; the proper number of visits per week or any of the many other administrative and scientific rules in effect in the modern hospital?

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In what degree does it concern the hospital when a staff member gains a reputation for engaging in unethical conduct outside the hospital?

* * *

Is it possible to insist that the surgical staff adopt routine methods of preoperative preparation and postoperative care?

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How can the surgical staff be effectively urged to practice economy in the use of supplies, such as gauze, catgut and instruments?

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Should there be a complete departmentalization of the surgical departments, such as a division of orthopedic surgery, surgery for children, proctology and genito-urinary surgery? If so, should the surgeons of these divisions hold a rank equal to that of the general surgeon?

* * *

How can the ideal consultation be made more frequent in occurence in our hospitals? By this term is implied a deliberate and thorough consultation, with both the consultant and the physician in charge of the case present.

* * *

Should promotion to a chiefship be made from the junior staff when such a vacancy occurs? Should all promotions, demotions or dismissals be first recommended by the medical executive committee?

* * *

Should there be a retirement age for members of the staff and if so, why should the surgeon be retired earlier than the internist, as is often the case?

* * *

How should the courtesy staff be appointed? What are its prerogatives and how can the hospital protect itself against unskilled or overzealous operating surgeons? Is it unfair to require applicants for the courtesy staff to operate before appointment in the presence of one or more of the regularly appointed staff?

* * *

Should it ever become necessary to discipline a staff member severely, how should this be done?

* * *

Is the hospital which has a full-time paid staff likely to render a better service to its community

than the institution with a part-time rotating staff policy?

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Should there be a definitely organized senior and junior staff and if so, should meetings of these groups be held jointly or separately?

* * *

Should staff organizations and relationships, as well as the methods of securing staff appointments, vary in municipal and acute general hospitals?

* * *

How can members of the intern staff be most efficiently taught in the average acute general nonteaching hospital?

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What is the proper ratio of interns needed per patient?

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How can the autopsy percentage of the general hospital be kept at a high level and what is the intern's responsibility in relation to bringing this about?

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Should interns be allowed to perform major operations during their period of service?

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Is there any valid reason why women interns should not be accepted in the general hospital?

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What is the advantage of holding weekly conferences of the intern staff? Is this considered a wise policy?

* * *

Should the budget of the schools for nurses be separate from the funds utilized in the actual care of patients?

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In determining the size of the average training school, are there any statistics that are sufficiently reliable to be rigidly employed for this purpose? What percentage of the total hospital expenditure should be assigned to the training school?

* * *

How should the training school committee be organized and who should be responsible for the attendance of the staff lecturers who have agreed to serve in this capacity?

* * *

There has come from several sources a suggestion that the hospital assign senior nurses to the care of private patients and thus realize an income from their services. Would the adoption of such a policy be fair to the nurse, the public and the hospital? Should state boards of nurse examiners permit such a practice?

* * *

Many hospitals conduct their own registry for graduate nurses. Is this an obligation of the school for nurses from which these young women graduate? Is not a central registry capable of rendering better service to the private duty nurse? Who should administer the nurses' registry—nurses or doctors or neither?

* * *

In the hospital organization, the housekeeper is variously placed. Is it more efficient and less conducive to friction for the housekeeper to answer to the chief nurse or to the superintendent of the hospital? What under the latter arrangement should the chief nurse do when wards and service rooms are often unclean and the superintendent fails to correct this fault? Can and should nurses work amidst insanitary surroundings?

* * *

Supervision of the health of the pupil nurse is an important obligation of the hospital. Whose duty is it to treat ill nurses? Is it unreasonable or unnecessary to require Schick and Dick testing? Should all young women entering the school be likewise immunized against typhoid fever and smallpox?

* * *

If a nurses' registry is maintained by the hospital, has the institution a right to insist that all registrants accept twenty-four-hour maternity service?

* * *

Is it cheaper to conduct a school for nurses or to engage graduates? Which plan is most advisable from the standpoint of maintaining a high scientific morale?

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What is the best method of preparing and counting sponges in the operating room? Should the nurse ever refuse to carry out a treatment ordered by the physician and should it ever be permissible for the nurse to refuse to supply sutures to close the abdomen when the sponge count does not balance?

* * *

How can the principle of group nursing be more extensively applied in our hospitals?

* * *

Hospitals are this year experiencing increased difficulty in preventing the accumulation of major deficits. What are the causes underlying the aggravation of this perennial difficulty? Should the

hospital close one or more wards in an attempt to economize? Would any money be saved by the reduction of the bed capacity of each ward unit?

* * *

There is much discussion relative to the degree in which the state or city should participate in providing treatment for semi or wholly indigent patients. What is the relative obligation of the community chest and the custodians of tax monies in furnishing medical care when persons of this class become ill?

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If no municipal hospital is to be found in the community, should the basis of payment for the care of the indigent be on a lump or on a per diem plan? What amount should be charged?

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What should be done if the public officials refuse to recognize the claims of the hospital for financial aid? Has the hospital a moral right to refuse to admit free patients?

* * *

Should the staff doctor be made responsible for the payment of the hospital bills of his private patients? If not, why is he often held responsible for the payment of laboratory and x-ray bills of out-patients whom he sends to the hospital to have such studies made?

* * *

Should the hospital charge for the care of babies in the maternity department?

* * *

The income of the hospital is usually lowest during the summer months. Should special rates be set for rooms and services during July and August? If this is done, would such an action tend to create misunderstandings later in the year when more is charged for similar services?

* * *

Some hospitals send out twice or thrice annually requests for contributions based on various grounds, such as the needs of children or of maternity patients. Is such a procedure wise and will such frequent requests for funds tire an already much solicited public?

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Is it good financing to meet deficits out of legacies which are not made for specific purposes?

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What types of investments are safest for hospital funds?

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What should be done when the hospital cannot meet its financial obligations? Is it just to the public knowingly to render an inferior service because funds are unprocurable with which to supply a good and effective service?

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How can the public be best educated as to the cost of good hospital care?

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Many institutions have evolved from small private hospitals. In a community with such a small private institution, how can accident cases be cared for when the free load is becoming too great for the physician-owner to carry?

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What should be the policy of the hospital in accepting grants for the endowment of beds? Formerly five thousand dollars was considered a sufficient sum for this purpose. If the hospital takes seriously this agreement, is the ultimate outcome of such a policy consonant with the economic existence of the institution?

* * *

Many hospitals do not realize their true service and cost trends until the year is drawing to a close. Would not a graph on which is marked from month to month the curve of expenses, of incomes and of occupancy be of service in keeping the board of trustees and the superintendent informed as to the true status of the hospital's work?

* * *

There is a growing demand in suburban and rural communities for provisions for the care of contagious cases. Is it a safe policy for such a department to be incorporated in a general hospital? Should pupils be allowed to nurse contagious cases and then to return to the nurses' home to sleep? How can the public be educated as to the soundness and safety of such a policy?

* * *

There has been some discussion of late as to the reduplication of expensive services by community hospitals. Is it not possible for a closer cooperation between institutions to be brought about so that one hospital may, for example, equip itself to treat and study cancer while another might concentrate on metabolic diseases?

* * *

Is the time approaching when small hospitals will be crowded out of existence by the larger and more heavily endowed institutions? How can institutions of fifty beds or less compete either in excellence of service or in cost of maintenance with the larger hospitals?

Mt. Sinai Provides Comforts for Patients of Moderate Means

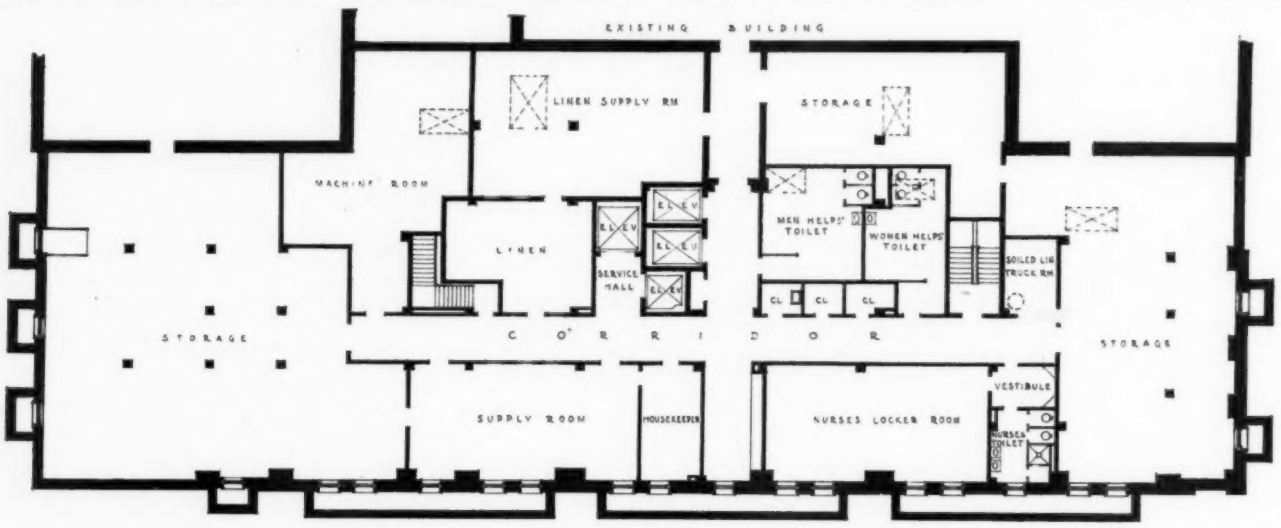
By ROBERT D. KOHN and CHARLES BUTLER, Architects, S. S. GOLDWATER, M.D., Consultant and JOSEPH TURNER, M.D., Director, Mt. Sinai Hospital, New York City

THE planning of suitable accommodations for middle class patients is probably receiving more attention at present than any other problem in the field of hospital construction.

Hospital administrators have in many instances been almost too ready to assume that a solution of the problem of providing acceptable hospital accommodations for persons of refinement but of modest means can be found by some trick of planning that will produce high class private rooms or their equivalent at construction and maintenance costs no greater than those of single beds in old-fashioned hospital wards. We do not believe that this can be done and we think the most sensible approach to this subject is that of hospitals which frankly recognize that what patients of moderate means want is a type of service that the patients in question cannot afford, and that if service of the desired quality is supplied a difference will remain between patients' payments and hospital costs which the hospital must be prepared to assume. In the development of its plans for a semiprivate building, Mt. Sinai Hospital, New York City, assumed that the creation of acceptable service involved (a) a building fund contributed by the friends of the hospital, and (b) future voluntary contributions by benevolent individuals to defray part of the cost of maintenance.

The site for the new building was large enough

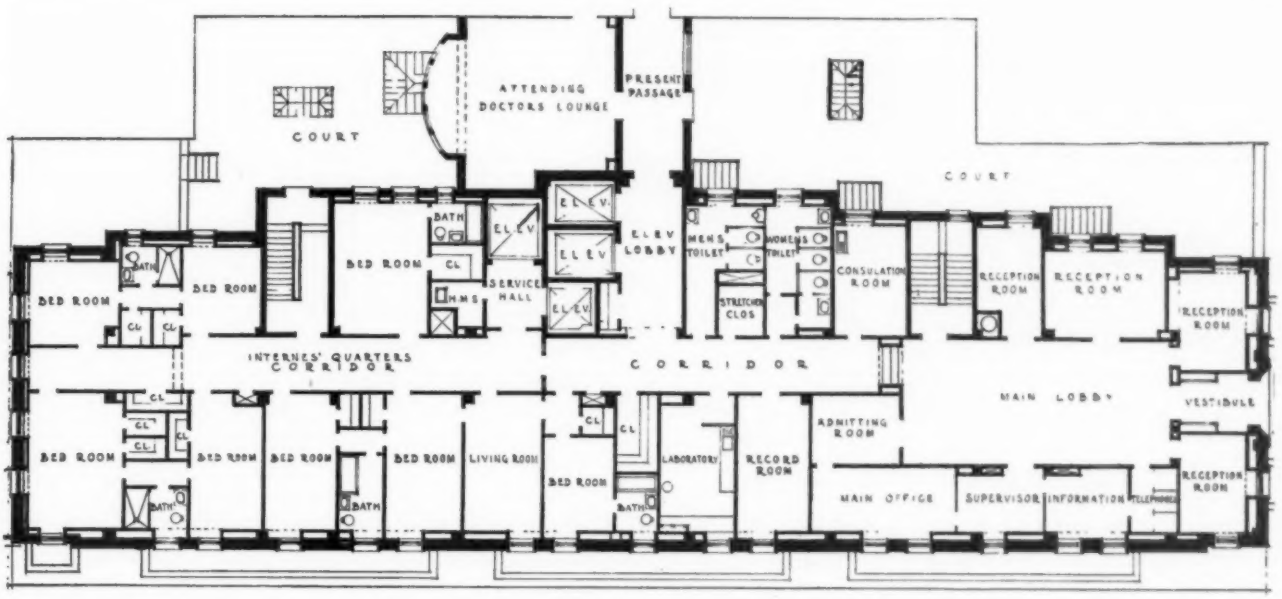
to allow the planning of typical ward floors measuring about 44 feet in average depth by 174 feet in length. Various preliminary studies limited to this area showed accommodations ranging all the way from twenty to thirty beds per floor. A tentative thirty-bed plan, the most economical of the series, was based on the use of two-bed or semiprivate rooms, 10 feet wide by 16 feet deep. Each room had one window. As nearly all of the rooms looked out on Central Park, the plan was not without its attractions. On the other hand, the ward floor area for each bed was only 80 square feet, and there was no direct connection between any of the service rooms and the wards. The plan as a whole made no particular appeal except that of economy in construction, together with certain economies in maintenance. The trustees eventually decided to abandon the minimum standards reflected in this plan, and at their request we undertook the development of the far more liberal plan which is shown in the accompanying illustrations.



The basement has been expanded to cover an area considerably larger than that of the upper stories, to increase storage space.

In the accepted plan, each floor accommodates twenty patients. The typical ward has three beds and is 21 feet wide by a little more than 17 feet deep. The ward floor area per bed is 120 square feet. Each three-bed ward has two windows with a westerly exposure overlooking Central Park. One of the three beds is not near a window, but a study of the hospital's existing semiprivate service showed that approximately one-third of the inmates are out-of-bed patients, and as day rooms, local or floor porches and roof solariums are provided to which ambulatory patients may resort, it is assumed that only two out of the three patients that each ward accommodates will be in bed throughout the twenty-four-hour period, and that under normal conditions all recumbent patients will occupy beds directly adjoining windows. During the day each patient will have the benefit of 180 square feet of floor space (two occupied beds per ward); at night each patient will have 120 square feet of floor space (three patients per ward). This, of course, is liberal and relatively costly planning, but the hospital is chiefly concerned with the comfort of its patients. It is, of course, quite possible that some future hospital board may find it desirable to adopt a less liberal policy toward semiprivate patients, or to utilize the building for ordinary ward service, and the shape, size and equipment of each three-bed ward are such that it may be changed to a four-bed ward without structural alteration. In this manner the capacity of the six ward floors can be increased from 120 to 156 beds.

In each three-bed ward there is a separate combination locker for each patient, with a spare locker for future emergencies. A built-in closet in each ward is designed for nursing supplies. Each ward has a washbasin. Curtains on trolleys separate the beds from each other when desired. There is a natural movement of air across the ward from the double windows (with inserted sash ventilators of the deflector type) to the central corridor which is 7 feet 6 inches wide and is open at both ends. Between each pair of three-bed wards there is a glass enclosed nurses' substation with charting shelf and an outside sink room or subutility room, containing an open bedpan sink, a closed bedpan washer built in flush with the wall, a utility sink and drainboard, a counter-shelf cabinet, and gas and electric outlets. In order to reduce to the minimum the noise from the plumbing, the fixtures are all placed against one wall of the subutility room, and this wall is built in two thicknesses of terra cotta with 1-inch felt deadening. To reduce noise further doors are provided between the wards and the



The first floor combines reception and consultation facilities with residential quarters for the resident staff and resident officials.

nurses' substation and again between these stations and the subutility rooms. In addition, the ceilings of all of these rooms are treated with acoustical material.

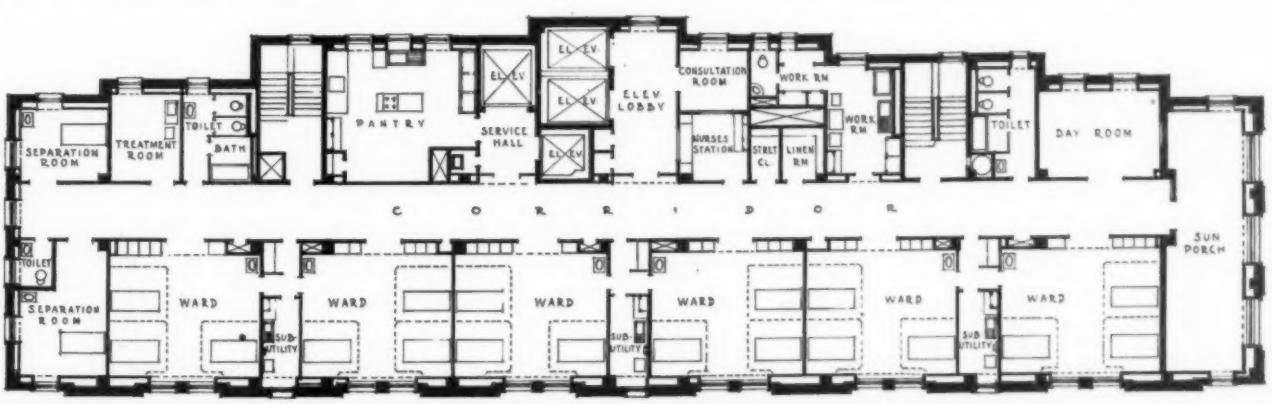
In addition to semi-indirect light fixtures for general illumination each ward has a low, flush, wall night light, and each bed is equipped with a nurses' call signal, electric service outlets and a radio. Heavy-duty electric outlets for portable x-ray outfits as well as cardiograph outlets are distributed throughout the building. In each three-bed ward an electric fan outlet is placed high up on the mullion between the coupled windows.

Venetian Blinds Are Used

The ward and subutility windows have double-hung wood sash without transoms and with ventilators in the wide bottom rail of the lower sash. Mosquito screens of the roll-up type are provided and wood slat inside Venetian blinds have been substituted for the usual awnings. The blinds and screens remain in position throughout the year, so that the inconvenience and cost of the removal of sliding screens and awnings in winter are avoided.

Separation or quiet rooms are needed in connection with semiprivate ward service. On each floor there are two such rooms, with special lavatory and toilet close by. On each floor there is also a sun porch 10 feet 6 inches wide by 36 feet long, with east, west and south exposure. The east and west openings are glazed, but the long south side is merely screened. Adjoining the sun porch is an enclosed day room for the use of convalescent patients. There are two groups of patients' toilets and baths, one at each end of the ward floor. Supplementing the three small utility rooms which connect directly with the pairs of wards already described is a central workroom containing airing closet, dryer, blanket and solution warmer, instrument sterilizer, utensil sterilizer, work table, built-in cabinet with countershelf, deep cupboards flush with the wall, utility sink and drainboard, and refrigerator with compartments for ice and biological products.

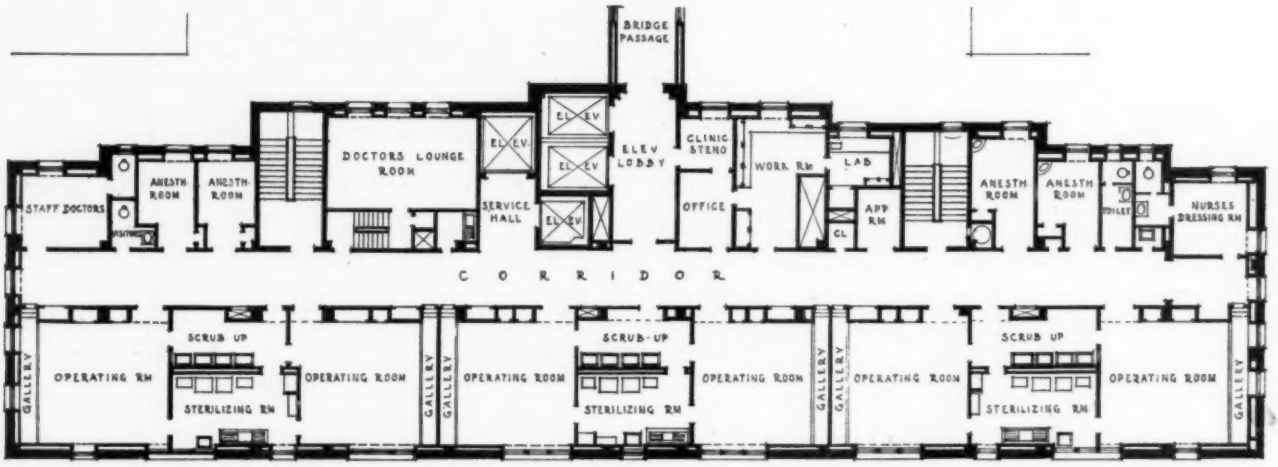
A central nurses' station directly overlooks



This plan is typical of the second to the seventh floors.

the elevator lobby into which two passenger elevators open. Off this lobby and directly adjoining and under visual control from the nurses' station is a visitors' room. The central nurses' control station contains the medicine cabinet and medicine sink. The nurses' toilet opens off the nurses' workroom. A large linen closet and a stretcher closet are centrally placed.

Two service elevators of generous size open into a service hall through which indirect access is obtained to the floor pantry or serving room. Food supplied from a central kitchen in another building will be brought to the floors in bulk and the trays will be prepared locally in the floor kitchens. On each floor there is an examining and treatment room containing an all-service sink, electric sterilizer and electric power outlets. The janitors' closet opens into the service hall adjoining the service elevators and not into the main corridor. A telephone booth for the use of patients and the public is placed in the elevator lobby. A drinking fountain, a clothes chute and a mail chute are additional items of equipment. The typical floors just described are the second, third, fourth, fifth, sixth and seventh.



The eighth and ninth floors are alike, each having six operating rooms.

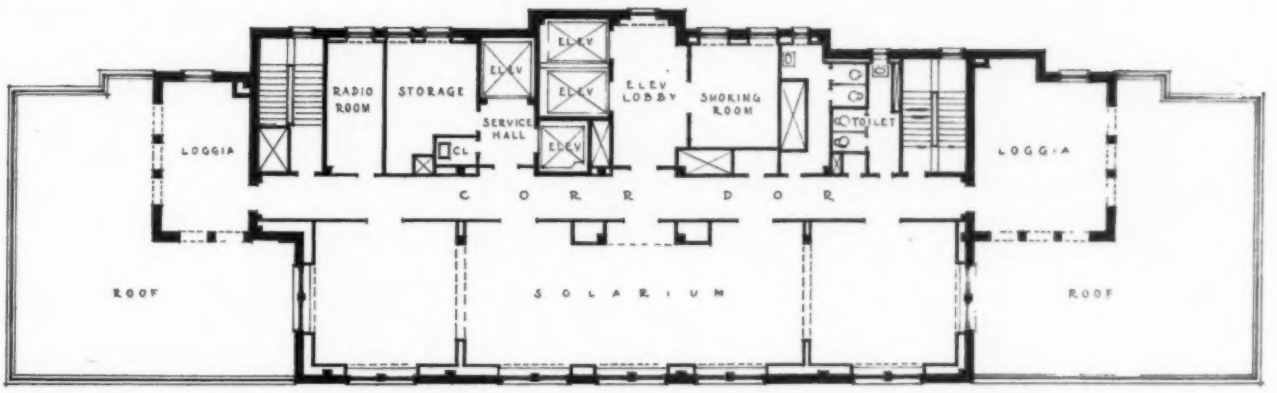
On the eighth and ninth floors, twelve operating rooms have been assembled, the average size being 18 feet 6 inches by 19 feet. Not all of these rooms will be needed for the semiprivate service; the remainder are intended for the general surgical service of the hospital and will replace operating rooms in the administration building which, by the time the new building is finished, will have been in constant use for nearly thirty years and no longer meet the requirements of the hospital. As the ninth floor of the new building is connected by a bridge with the existing surgical ward building, carrying patients from the major surgical wards to the six operating rooms on the ninth floor of the new building involves only a single unbroken elevator journey.

Three pairs of operating rooms on each typical surgical floor are arranged in conventional fashion with a single scrub room and local sterilizing room between each pair.

No special stress has been laid on the lighting of the operating rooms by natural means, partly because the unavoidable exposure of many of the operating rooms was west by northwest and not due north, and partly because of the preference of the staff for a uniformly reliable system of artificial illumination. The glare of the western sun will be controlled and subdued by means of metal Venetian blinds, placed outside the window sash but controlled from within.

Each local sterilizing room is about 9 feet 6 inches wide and from 15 feet 6 inches to 17 feet long, and is provided with two ordinary instrument and two utensil sterilizers (so that the work of each operating room may be conducted independently) and an oil sterilizer for special instruments. Sterile water will be prepared in large automatic central sterilizers placed on the eleventh or tower floor and will be piped to the operating room floor. The outlets are in the local sterilizing and utility rooms, in each of which there is a heated cabinet for blankets and solutions, a flushing-rim slop sink, and a sink with double drainboard for cleaning instruments. Each operating room is provided with outlets for compressed air and vacuum and with alternating current connections. A duplex x-ray viewing box is installed in each operating room.

Each of the scrub-up rooms, between the sterilizing rooms and the corridor, contains four individual scrub-up sinks. The scrub-up and sterilizing rooms communicate directly with the operating rooms by double swinging doors, while the scrub-up rooms open directly into the corridor through trimmed openings without doors.



The principal roof story has been arranged for convalescent patients, with a large solarium, a smoking room, two covered loggias and extensive uncovered roof areas.

The temperature of the mechanically supplied air of the operating rooms will be controlled both summer and winter, and an automatic humidifying device will contribute factors of safety and comfort. A compensating exhaust system for the operating rooms is expected to work indirectly through the adjoining sterilizing rooms.

The operating rooms are finished in gray-green tile carried up above the door heads and across the face of the students' galleries. These are reached through separate entrances and are set 2 feet above the floor. Above the solid gallery rail is an inclined plate glass screen, against which the students may lean, and through which they look down on the operative field.

The scrub-up and sterilizing rooms have tiled floors and walls, while the corridor floor is of rubber tile and the walls are wainscoted with glazed tile to a height of 4 feet 9 inches.

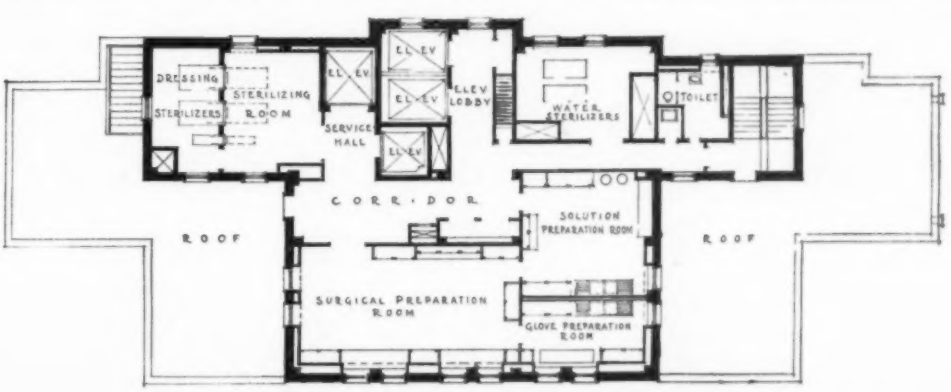
Surgical supply cabinets are built into the wall between the operating rooms and the corridor, some opening into the rooms and some onto the corridor. In addition recessed open glass shelving is provided in the operating rooms.

For each set of operating rooms there are four anesthetizing rooms, two near each end of the building. On each of the two operating room floors there are locker and dressing rooms for the resident staff, the visiting staff and the nurses. Each floor has a central workroom, a small laboratory equipped for frozen tissue work, an orderlies' toilet, an apparatus room and a cleaners' closet. Adjoining the supervisor's office on each floor and connected with it is a small room for a clinical stenographer.

On the eleventh floor, in a setback story above the solariums, are quarters and equipment for the sterilization and preparation of dressings, supplies and solutions, and the central water sterilizers, with automatic controls. The plan shows a rather extensive layout which includes built-in sterilizers of large size and designed to provide aseptic dressings for the entire 750-bed hospital, which includes, besides the semiprivate service in the present building, an extensive surgical ward service of nearly 300 beds, a private patients' service of 131 rooms (preponderantly surgical) and a large out-patient department.

Directly above the operating room floors, the principal roof story has been arranged for the accommodation of convalescent patients, with a large solarium overlooking Central Park, a smoking room, two covered loggias and extensive uncovered roof areas floored with tile.

A building for the accommodation of 120 semiprivate patients was considered of sufficient importance to have an entrance of its own. The entrance is on One-Hundredth Street, close to Fifth Avenue and midway between the general hospital entrance and the entrance to the private pavilion. The main lobby, 37 feet 6 inches long by 17 feet wide, the floor of which has been dropped 16 in-



In a setback above the solarium are the workrooms for the sterilization and preparation of dressings, supplies and solutions, and the central water sterilizers.

ches below the first floor level in order to obtain greater ceiling height, is surrounded by a series of small reception and consultation rooms, the usual information office, supervisors' office and accounting office. Adjoining are the record room and a small clinical laboratory. The remainder of the first floor is to be occupied by a resident staff and resident officials. The utilization of this space for the purpose named accomplishes two objects: (1) No patients are placed on the first floor which is close to the street, and (2) a resident staff assigned exclusively to the semiprivate patients is lodged close to but quite apart from the semiprivate wards, thus ensuring prompt and efficient service.

The pavilion is connected with the main hospital building by means of corridors on the first and basement floors and a bridge on the ninth floor. The sitting room and locker rooms for the visiting staff are centrally placed on the first floor between the main hospital building and the semiprivate building, opening off the communicating corridor.

The basement of the new building has been expanded to cover an area considerably larger than that of the upper stories for the purpose of adding to the storage facilities of the main hospital which occupy the basements of the adjoining buildings. The purely local services in the basement of the semiprivate building include a locker and dressing room for special nurses, a housekeeper's supply room, a linen supply room and locker rooms and toilets for male and female help.

Construction Is of Brick and Limestone

In order to follow as closely as possible the general architectural appearance of the existing hospital, red brick with limestone base and trim was used in construction. The projecting cornices of the older buildings have, however, been eliminated and replaced by flat ornamental bands of limestone and brick laid in patterns, and the vertical lines of the ward windows have been slightly accentuated. The arched windows of the solarium placed above the two floors of operating rooms form the crowning feature of the main building, above which extends the low tower, with its windows grouped vertically.

The ward floors are covered with asphalt composition tiles with coved rubber bases, while the subutility rooms have the usual tile floors and wainscots.

The pantries and the adjoining service halls are floored with flint tile and the pantry walls are wainscoted to a height of 6 feet with glazed tile, while the service hall walls are protected by pipe rails. Service doors are protected with 3 foot 6 inch kick plates of bakelite or polished rustless steel, depending on the amount of hard usage they are expected to receive.

The sun porches are floored with brown quarry tile and have walls of buff glazed terra cotta.

The solarium on the tenth floor, a room measuring 19 feet by 88 feet, is floored with terrazzo and with a base, border and wainscot of faïence tile. The adjoining uncovered roofs have low parapet walls about 18 inches high topped with high iron railings, so that patients may enjoy the view over the park in absolute safety.

A hot water, direct radiation heating system is employed, and natural ventilation is relied on except in the operating rooms and for the pantries, toilets, wash rooms and subutility rooms, for which a positive exhaust system is provided. All of the general lighting is by direct fixtures. Brass pipe is used in plumbing for both cold and hot water, and all fittings are chromium plated.

A New Method of Interpreting the Hospital's Work to the Public

How Riley Hospital, Indianapolis, a unit of the Indiana University School of Medicine, is working through the schools, parent-teacher associations, county medical societies, health offices and service clubs to help the citizens of its community is told by the *Trained Nurse and Hospital Review.* Riley Hospital's activities are being interpreted direct to the people by two graduate nurses of the Indiana University School of Nursing. Often these nurses present short educational programs, give health talks in the schools, outline vocational objectives to high school girls and visualize Riley Hospital by means of films and slides.

As a result of these meetings, service committees are formed, through the offices of which the monthly hospital bulletin is distributed each month. In this way the hospital learns of the needs of the citizens, and those who have used or may use the hospital are kept in touch with its work.

Mrs. C. E. Edmondsen, a trained social worker who is connected with the extension division of the University of Indiana, and Mrs. Ethel P. Clarke, director of the Indiana University School of Nursing, are in charge of the work.

A London Hospital That Is Run Entirely by Women

The South London Hospital for Women is the only hospital in London that is wholly managed and run by women, according to *The Hospital.* More than 12,000 women and children are treated annually in the wards and out-patient department. The hospital has 115 beds, and there is always a long waiting list of urgent cases. Recently a new out-patients' block was built to meet the increasing demands upon the hospital, at a cost of £65,000. The in-patient department has been in operation for the last fourteen years.

Factors That Influence Ratio of Personnel to Patients*

By MALCOLM T. MacEACHERN, M.D., C.M., D.Sc.
Associate Director, American College of Surgeons, Chicago

A SURVEY of over 1,000 hospitals on the approved list of the American College of Surgeons has convinced me that adequate study of the problem of ratio of personnel to patients or beds by the individual hospital is lacking. While I shall here attempt to submit definite averages for various types of personnel based on what 1,000 or more approved hospitals are doing, yet I believe the proper solution of the problem is for each institution to study its own work load in relation to its personnel. This can be done accurately by recording each function of any department, and the time consumed by it, over a period of time sufficient to establish a proper average. Such time-labor studies offer the most intelligent basis for establishing the ratio of personnel to patients or beds in the individual hospital. A study of this nature can be carried on to distinct advantage by any hospital.

Older Hospitals Require More Personnel

In considering the ratio of hospital personnel to patients several important factors must be taken into consideration.

The older hospital, as a rule, has a larger personnel for the number of patients served than does the hospital built within recent years. Modern hospitals, because of the greater thought that has been given to their planning, have the advantage of being able to reduce personnel and at the same time to maintain efficiency.

One of the important lessons hospital authorities are learning is that the building constructed vertically rather than horizontally makes possible a noticeable reduction in personnel. This is strikingly manifested by the new Hudson County Tuberculosis Sanatorium, Secaucus, N. J. The old sanatorium with its 195 beds was described as "scattered all over the landscape." The new building contains 500 beds, 400 in the main building and 100 in the preventorium, yet the estimated increase in personnel for the new institution is only 20 per cent. In line with this change from the horizontal plan to the multiple storied hospital is a suggestion for the elimination of long and inaccessible wings which considerably increase the time consumed in catering to the patient's wants.

The interior arrangement of the hospital is also a vital factor in influencing the ratio of personnel to patients. Small wards, for instance, require a greater proportion of employees than large ones, no doubt one of the reasons for the higher ratio of nursing personnel in private hospitals. Whether the rooms are large or small, the utility rooms should be close to them so as to effect a saving in personnel. Dr. Christopher G. Parnall, medical director, Rochester General Hospital, Rochester, N. Y., recommends that the utility rooms open directly off the ward units, whether the wards are of the public or semi-private type. Gladys Sellew, Cook County Hospital School of Nursing, Chicago, in her recent book on "Ward Administration," urges that rooms for preparing stupes, poultices and similar appliances be close to the ward. She also emphasizes the value of the central diet kitchen and the central room for medical equipment as a means of saving time.

The present day tendency in hospital planning and construction is to save steps in the performance of the activities of the institution. To this end there is a movement to individualize the facilities for each patient. Extra plumbing, running water and examining and treatment facilities in close proximity to the patient aid materially in reducing the work load as well as the operating costs.

How Upkeep Influences Personnel

Upkeep both inside and outside the hospital is another factor not to be overlooked in considering personnel. For instance, an old hospital with wood rather than terrazzo, tile or linoleum flooring, needs more persons to keep it clean. Certain buildings will require more painting, repairs and general upkeep than others, perhaps even a full-time maintenance group may be necessary for such work.

The many types of hospital labor saving equip-

*This is Part 1 of an article by Doctor MacEachern on the ratio of hospital personnel to patients. Part 2 will appear in the November issue.

ment are too well known to need enumerating. These work savers are now available for almost every department of the hospital, even to mopping tanks which are said to enable three men to do the work formerly done by five. Miss Sellew makes another suggestion along this line, namely, that hospitals agree on the sizes of dressings and sponges required so that these articles may be made by machinery and the time of nurses or other personnel saved. The way is now paved for such a procedure by the report on the standardization of surgical dressings published in June, 1930, by the American College of Surgeons. If the standard dressings recommended are adopted by all hospitals it will be only a matter of time before these dressings can be made by machinery.

Estimating Personnel for Special Cases

The variation in number of personnel is so great in hospitals caring for special types of patients that an average of all their ratios can never be typical. The lowest ratio will probably be found for ambulant, convalescent and chronic patients. For these the ratios are frequently 1 to 60 patients. Dr. John Bryant, Boston, in his book on "Convalescence," states that the ratio of personnel to convalescent patients should not fall below 1 to 30, though actual ratios are probably lower.

A marked difference is also found in personnel caring for chronic and acute cases. Dr. E. H. Lewinski-Corwin, director, Hospital Information and Service Bureau, New York City, in "The Hospital Situation in Greater New York" shows that in 1921 the hospitals for tuberculosis and chronic ailments averaged a little less than ½ employee per patient, while the average for general hospitals was 1½ employees per patient. The group of special hospitals, including largely pediatric, maternity and orthopedic institutions, showed a ratio of 1¼ employees per patient. T. B. Kidner, New York City, advises that the nonprofessional personnel of a public tuberculosis sanatorium should be 22 per cent of the bed capacity, which again is considerably less than we find in most general or special acute types of hospitals.

It is quite apparent to all that acute cases require a higher ratio of personnel than chronic or convalescent. Mental, pediatric, obstetric and surgical wards all necessitate a higher ratio of personnel, and there is considerable variation among these groups. Surgical services require a higher ratio of personnel than acute medical cases. A time-labor study of nursing care required for different types of patients at Mt. Sinai Hospital, New York City, brought out this fact emphatically, one example cited being that of an adult patient with mitral stenosis requiring three and one-half hours of nursing service, whereas an eight-day gastro-enterostomy case required six hours. Many similar examples of variation might be cited.

No study of the ratio of personnel to patients can be undertaken without a careful analysis of the type of service rendered. The more complete and scientific service a hospital renders the higher will be the ratio of personnel to patients. This is well illustrated by comparing two hospitals in a city of 88,000. The two institutions were equally well equipped and had the same staff of doctors and the same class of patients. In one institution where the nursing personnel was 1 to 6 patients the postoperative surgical death rate was 5.5 per cent, whereas in the other hospital where there was 1 nurse to every 1½ patients the postoperative death rate was only 1.8 per cent. This variation in results was attributed by the medical staff and management particularly to the difference in ratio of nursing personnel to patients.

It is evident that a careful selection of employees with due regard to their mental, physical and moral qualifications will have some bearing on the number required. Persons capable of thinking for themselves, who have initiative and good judgment, industry and interest, will tend to increase the unit volume of work and will bring about more permanence in the staff. The value of the person with training is illustrated in the work of graduate nurses as compared with that of students. Albert W. Buck, superintendent, New Haven Hospital, New Haven, Conn., in a study of 84 hospitals found that the average number of graduate nurses was 1 for about 14 beds, while the number of student nurses was 2 to each 7 beds.

Work Done by Those Not on Pay Roll

In some hospitals a large amount of the work is done by persons not on the pay roll. Many sectarian or church hospitals come in this category. Catholic Sisters and others give valuable services without being on the pay roll or considered as fixed personnel. Doctor Lewinski-Corwin's report, previously mentioned, shows that of all the New York general hospitals a Catholic hospital had the lowest ratio of personnel to patients. He attributes this to the large amount of work done by the Sisters. Some hospitals have volunteer workers, which also affects the ratio of personnel to patients. In others, one type of employee will assume several different kinds of work—the intern may replace the laboratory technician, the nurse may replace the

dietitian, floor nurses may do maid work, whereas very large hospitals usually have a staff trained for individual tasks. Many hospitals, especially those desiring to have accredited nursing schools, have delegated maids or attendants to do the work not directly concerned with the technique of nursing in order to raise the educational standards of the nursing curriculum.

How Many Hours Do the Workers Work?

The number of hours of duty is closely allied with the number of personnel. For instance, one of the reasons more student nurses are required than graduate nurses is that the former must devote a certain amount of time to lectures and study. Some hospitals allow no time for study during hours on duty, a factor that slightly reduces the personnel. Then again, the nursing day varies from eight to twelve hours. The tendency, however, is toward the eight-hour day as with a longer day the quality of the nursing service is lowered. Interns, too, serve fewer hours in hospitals where there are a great many teaching clinics. Therefore, more are needed. Most hospital personnel now are on an eight-hour day schedule.

That there is a decided seasonal rise and fall in the graph of average daily patients may be seen from figures presented in the Philadelphia Hospital and Health Survey for 1929. The committee reports that "The maximum and minimum utilization in both years (1927 and 1928) were identical as to month and proportion of beds used: March—70 per cent, and August—57 per cent." A similar variation in patient averages may be expected in other Northern cities having seasonal extremes. On the other hand, hospitals of the Southwest probably show a more or less constant number of patients from month to month because the climate favors the sanatorium type of hospital and the treatment of chronic diseases. Accordingly, the personnel will remain more or less constant in number. The hospitals and sanatoriums at summer and winter resorts will, of course, show the greatest seasonal variation.

Whether a hospital is operated by a municipality or by a private corporation has a distinct bearing on the number of employees. The charity hospital is likely to show a still wider ratio of personnel to patients than the private hospital.

The spirit of the hospital is distinct from its managerial policy. Rather, it has to do with an indefinable attitude of the executives and employees, an alertness, a willingness to cooperate. Hospital morale is an important factor in building up a desirable personnel, characterized by such traits as induce increased volume of work through interest, industry and cooperation. Much depends upon the quality of supervision. The head of a department who takes a professional view of his work is usually able to inject greater efficiency into the work of subordinates. Moreover, one who works out time schedules and specifies definite duties for employees in his charge will doubtless be able to economize on staff requirements.

What are the actual ratios of personnel to patients in various hospitals and groups of hospitals throughout the United States? What are the ideal ratios recommended by authorities?

The 1929 census of the American Hospital Association shows that 719,622 hospital beds are occupied each day. In ascertaining the number of employees, an average ratio of 9 persons to 10 beds was used. How does this hypothetical ratio compare with the actual?

The 1927 report of the committee on county hospitals of the American Hospital Association shows that the general average ratio of total employees (including nurses) to beds was 0.52, or 1 employee to every 2 beds for 23 general hospitals. The range was all the way from 0.09 to 1.07 employees per bed. The average ratio for 32 county tuberculosis hospitals was 0.39 per bed or 1 employee for every 3 beds, with a range of 0.11 to 0.76.

Doctor Lewinski-Corwin's average ratio of employees to beds for 28 general hospitals in New York for 1922, 1.17 per bed or 1⅔ employees per patient, is decidedly higher than any of these figures. The highest ratio was 2.20 per bed or 2.48 per patient, while the lowest was 0.65 per bed and 0.89 per patient. The average ratio of employees to beds for 23 special hospitals was lower than for the general hospitals, being 0.96 or 1.21 per patient. Five hospitals for tuberculous and chronic patients showed the lowest average of 0.41 per bed and 0.46 per patient, approximating that of the county hospitals previously mentioned.

What Some Statistics Show

Statistics of the United Hospital Fund of New York for 1926 show an average ratio of 1.30 employees per bed in 27 general hospitals. The ratio of ten women's and children's hospitals was 0.86 per bed, and for the 12 special hospitals it was 1.15 per bed. The 6 chronic and convalescent hospitals had an average ratio of 0.59 per bed, a figure slightly higher than those for the previous two studies mentioned.

A survey of personnel in 105 hospitals, most of them general, published by *Hospital Management*, showed a wide difference in personnel of

hospitals have the same bed capacity. For 8 of the 200-bed hospitals in this group, in large cities, the following variation in the number of employees was found: 100, 37, 114, 285, 180, 167, 60 and 170. As the average number of patients per day for all 105 hospitals was 93 and the average number of employees 112, the general ratio per patient was 1.2 employees.

The staffing of individual hospitals is of interest, not only from the standpoint of the ratio of personnel to patients in the various units, but also from the classification and nomenclature of personnel. It is quite apparent from a review of the distribution of personnel in several hospitals that no uniform method of distribution or standard nomenclature is followed. This makes it more difficult to work out accurate average ratios of personnel to patients in the various units. To support this statement, three examples are submitted:

Hospital A, with 275 beds and an average of 200 patients daily, maintains a personnel of 301, exclusive of physicians, distributed as follows:

Administration	8
Office	14
School of nursing	37
Laboratories	14
Maintenance	21
Housekeeping	36
Steward's department	36
Laundry	17
Student nurses	114
Not classified	4
	301

Hospital B, with 440 beds, maintains a personnel of 500. Through a close check on its personnel for the past four years it is found that during this time the average ratio of personnel to patients has varied only from 1.73 to 1.76. The list of its pay roll positions for a typical month is as follows:

Hospital Employees

Administration	42	
X-ray	10	
Laboratory	17	
Occupational therapy	2	
Pharmacy	2	
Cardiograph	2	
Diabetic	1	
Hydrotherapy	1	
Out-maternity	1	
Anesthesia	1	
Medical and surgical	4	
Ward nurses	2	
Dietary	83	
Household	76	
Laundry	32	
Engineers, firemen, etc	16	
Elevator operators	11	
Carpenters	3	
Painters	7	
Orderlies	19	
Nurses' helpers	54	386

School of Nursing Employees

Nursing staff	6	
General nursing	68	
Household	18	
Telephone	4	
Dietary	16	
Maintenance	2	114
Total number of employees		500

Hospital C, with 195 beds and an average of 150 patients daily, maintains a personnel of 202, making a ratio of 1.34 employees to 1 patient, classified and distributed as follows:

General administration	11
Nursing	106
Operating room	6
Laboratory	4
X-ray	4
Dental	1
Drug	1
Records	2
Out-patient	3
Dietary	16
Housekeeping	24
Laundry	10
Mechanical	12
Transportation	2
	202

It is desirable and would be of practical value to have a further study made of the distribution and designation of hospital personnel in order that our institutions might have a better basis of comparison. This is undoubtedly an important factor bearing on the question under consideration, particularly when ratios are developed for the different groups of personnel associated with hospital work. It would not be difficult to develop such a classification if the accepted principles of hospital organization were followed.

In studying the literature I find that the opinion of authorities on the ratio of total personnel to patients varies all the way from less than 1 to

2 employees per patient. It is evident that no comprehensive study has been made of actual ratios for large groups. In an attempt to learn more about the prevailing ratios of hospital employees, with a view to establishing standard ratios in the future, as far as is possible, I have just completed an analysis of 195 typical hospitals taken from a group of over 1,000 hospitals approved by the American College of Surgeons. These hospitals handle acute cases and are representative of the average conditions existing in the larger group. For the purpose of analysis the statistical reports were divided as follows:

Group 1, 25 hospitals with 25-49 bed capacity
Group 2, 50 hospitals with 50-99 bed capacity
Group 3, 50 hospitals with 100-249 bed capacity
Group 4, 50 hospitals with 250-499 bed capacity
Group 5, 20 hospitals with 500 or more beds.

The findings of this survey show that the general average ratio of total personnel (including nurses) is 0.69 or approximately ⅔ of an employee per bed. The highest ratio for any hospital in the group was 1½ employees per bed, while the lowest was 0.13 for a county hospital having a large proportion of tuberculosis cases and employing only graduate nurses. By using 75 per cent of the bed capacity to obtain the average number of patients the ratio of personnel to patients was found to be 0.90, or 9 employees for every 10 patients. The range was from 0.18 to 2 per patient.

What A. C. of S. Study Shows

It is interesting to note that out of the entire list of 195 hospitals only 24 have a ratio as high as 1 or more than 1 employee per bed. This is in marked contrast to the findings of Doctor Lewinski-Corwin, which showed 29 out of 56 New York hospitals having 1 or more employees per bed. However, it must be borne in mind when comparing ratios that many hospital executives do not have the same ideas as to the meaning of "total employees"; consequently there will be variations in compilations of ratios. "Total employees" should mean "total pay roll employees."

For Group 1 (hospitals under 50 beds) the ratio of total employees was found to be 0.66 per bed and 0.87 per patient. The lowest figure was 0.32 per bed, and the highest was 1¼ per bed.

For Group 2 (hospitals of 50 to 100 beds) the average ratio of total employees to beds is virtually the same as for the previous group, the general average being 0.65. The ratio per patient is 0.85. The two hospitals sharing the high ratio of 1.26 employees per bed, or 1.72 per patient, handle a relatively large number of surgical cases and employ a greater proportion of student nurses than graduates. The low ratio in this group is the low figure for the entire list, which is 0.13, when only graduate nurses were employed.

For Group 3 (hospitals of 100 to 250 beds) the average ratio is 0.77, or ¾ of an employee per bed, which is 1.06 per patient, the largest general average for any of the five groups. The range is from 0.31 to 1.32 employees per bed, or 0.41 and 1.76 per patient. The highest ratio is, no doubt, accounted for by the large number of surgical cases handled, which was 1,945 as compared with 652 medical cases.

For Group 4 (hospitals of 250 to 500 beds) the ratio of employees per bed again drops to nearly the same as for Groups 1 and 2, namely, 0.65. The extreme ratios are 0.21 and 1.29 employees per bed, which is 0.28 and 1.73 per patient.

For Group 5 (hospitals of 500 beds and over) there was an average ratio of 0.75, ¾ of an employee per bed, or 1 employee for every patient. The high is high for the entire group, while the low is 0.45 per bed or 0.61 per patient, found in a city hospital.

The general average ratio of 9 employees for every 10 patients found in the survey of 195 hospitals is lower than for any group quoted from the literature, except that recorded for a study of county hospitals. This figure approximates the estimated ratio used by the American Hospital Association in determining the number of hospital employees for its annual survey. The general average approaches that of a group of 105 hospitals in scattered localities previously mentioned, but was considerably lower than the figures given for two studies of personnel ratios in New York City hospitals. It was found that the hospitals in Groups 1, 2 and 4 had nearly the same general ratio of ⅔ of an employee per bed or 4/5 per patient, and that those in Groups 3 and 5 had corresponding ratios of ¾ of an employee per bed or 1 per patient. A great range was apparent in the individual ratios.

National Nursing League's Recommendation

The Committee of the National League of Nursing Education makes this recommendation of nurse ratios in its 1920 report:

Free Ward Service
Day duty .....1 nurse to 5 patients
Night duty .....1 nurse to 10 patients

Private Ward Service
Day duty .....1 nurse to 3 patients
Night duty .....1 nurse to 5 patients

S. G. Davidson, superintendent, Butterworth

Hospital, Grand Rapids, Mich., advises the same ratio for day duty but for night duty suggests 1 nurse for 7 private room patients and 1 for 14 ward patients, which would make a total of 33 nurses on duty in a hundred-bed hospital. He also advises 6 for operating room; 2 for out-patient work; 2 for dietary; 2 for affiliated courses, contagious and mental; 2 for pharmacy, x-ray and similar services; a total of 47 nurses in active service. In "Nursing and Nursing Education in the United States," for 1923, 5 is suggested as the maximum number of patients that 1 student nurse can satisfactorily care for. The ratio advised for night duty is 1 to 10 patients. Frank E. Chapman, director of administration, University Hospitals, Cleveland, in considering the number of nursing supervisors required, stated that a nurse in direct charge of a nursing unit cannot efficiently supervise many more than 10 employees. I believe that a nurse supervisor could oversee from 60 to 75 patients but a head nurse could not supervise more than 25 to 30 patients if the work is to be done properly. This has been established by surveys of approved hospitals. In THE MODERN HOSPITAL for April, 1922, page 307, the nursing personnel of a typical ward of 22 patients is given as 1 head nurse, 1 senior nurse, 4 intermediates, and 2 night nurses. This makes a ratio of 1 nurse to 4 patients for day duty and 1 nurse to 12 patients at night.

Osteopath Sues for Right to Practice in Hospitals

The right of an osteopath to practice in two county hospitals in Weld County, Colorado, was denied in a recent court decision, according to a review of the case that appeared recently in the *Journal of the American Medical Association.*

The board of commissioners of the hospitals adopted a resolution to the effect that only "allopathic" and homeopathic physicians would be allowed to practice in the hospitals. The osteopath tried to enjoin the enforcement of the resolution, but his petition was dismissed. He then carried the case to the supreme court of Colorado. On the appeal he urged that the resolution of the board bore no substantial relation or benefit to public health, that its passage was not within the lawful police powers of the state or county and that it was an arbitrary and unreasonable exercise of that power and a discrimination against one class in favor of another class of citizens. The court felt, however, that the question for decision on the record was whether or not the plaintiff had been deprived of his rights under the privileges and immunities clauses of the state and Federal constitutions, and the due process and equal protection clauses of the Fourteenth Amendment of the Constitution of the United States.

The court, in dismissing the bill, cited a decision of the United States Supreme Court on a case in which a licensed osteopath had been refused the right to practice in a city hospital in Texas. It adopted that decision as follows: "The limitation of the provision is obviously directed to the qualifications of those to be admitted to the practice of their profession in the state and has nothing to do with the qualifications of those who are to be allowed to practice in a state hospital."

A physician, said the court, has no constitutional or statutory right to practice his profession in a county hospital. Since the county board has complete supervision and control of county hospitals in Colorado, a regulation excluding from a county hospital the devotees of some of the numerous systems or methods of treating diseases authorized to practice in Colorado is neither unreasonable nor arbitrary. Some choice of methods necessarily exists, and the court could not say that in the present case the board of county commissioners did not have an adequate basis for its resolution, nor that its resolution was not justified on the ground that, if the right to practice in the county hospital is open to all the different schools of medicine, there would be constant jealousies and dissatisfaction between the different schools of medicine, which probably might lessen the usefulness of the public hospital.

Who Will Pay the Bills for Injured Autoists Away From Home?

That the growing frequency of hospital help for motorists away from home is raising a new but definite problem for hospitals is set forth in an editorial in a Lansing, Mich., newspaper, based on a statement made by Walter S. Foster, president, Edward W. Sparrow Hospital Association, Lansing. The editorial is called, "Strangers Within Our Gates."

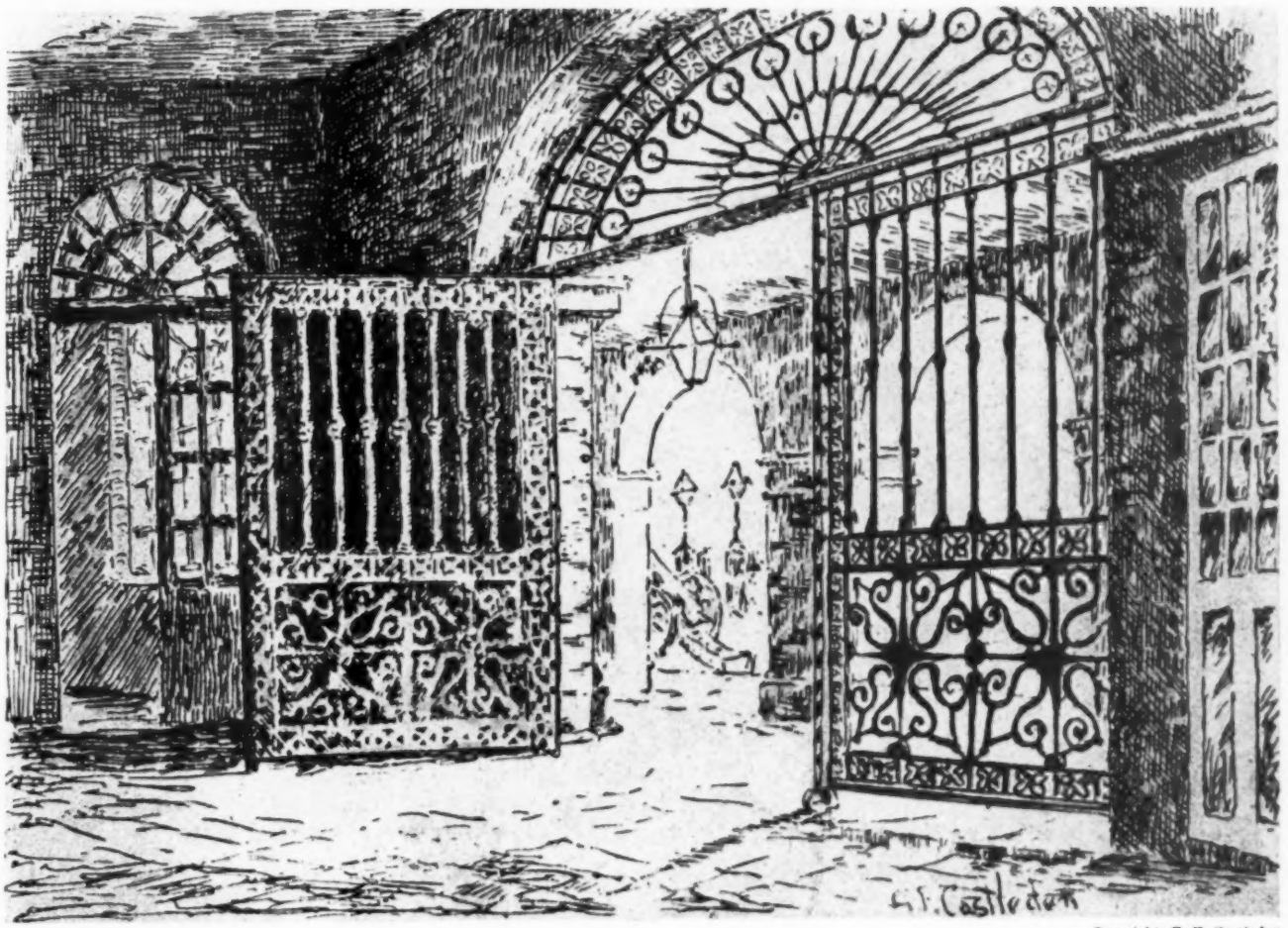
Among the problems that are arising from the ever increasing traffic congestion are those that confront hospitals that are called upon to care for patients who are overtaken by illness or incapacitated by accidents while touring about with little or no money. Who will pay these bills?

The editorial continues: "The city generally declines to bear the burden of such cases, assigning as a reason that the patients are, strictly speaking, not residents of the city. Legally they belong to some other community, and theoretically that other place should bear the expense of the accident."

But, according to Mr. Foster, hospitals meet with little success in attempting to collect from outside communities in such cases: "If the hospital could put itself on an ordinary business basis and take in only those who could 'show the money' such a situation would be relieved, but the hospital feels its duty is to relieve the sick and suffering, and it is therefore morally bound to take care of the strangers within our gates. But who will pay the hospital?

"In seeking an answer to this question we cannot reasonably look to any curtailment of fulfilling this moral obligation. It is the same general obligation which assures unfortunate Lansing residents treatment in other hospitals when they are taken ill or are injured while away from home. If the city government is legally unable to bear the expense, the citizens are morally bound to share their portion of this mutual obligation through the community welfare fund.

"Otherwise, there remains but one alternative for the hospital—so to revise its fees as to assure a revenue in keeping with this new item of overhead."



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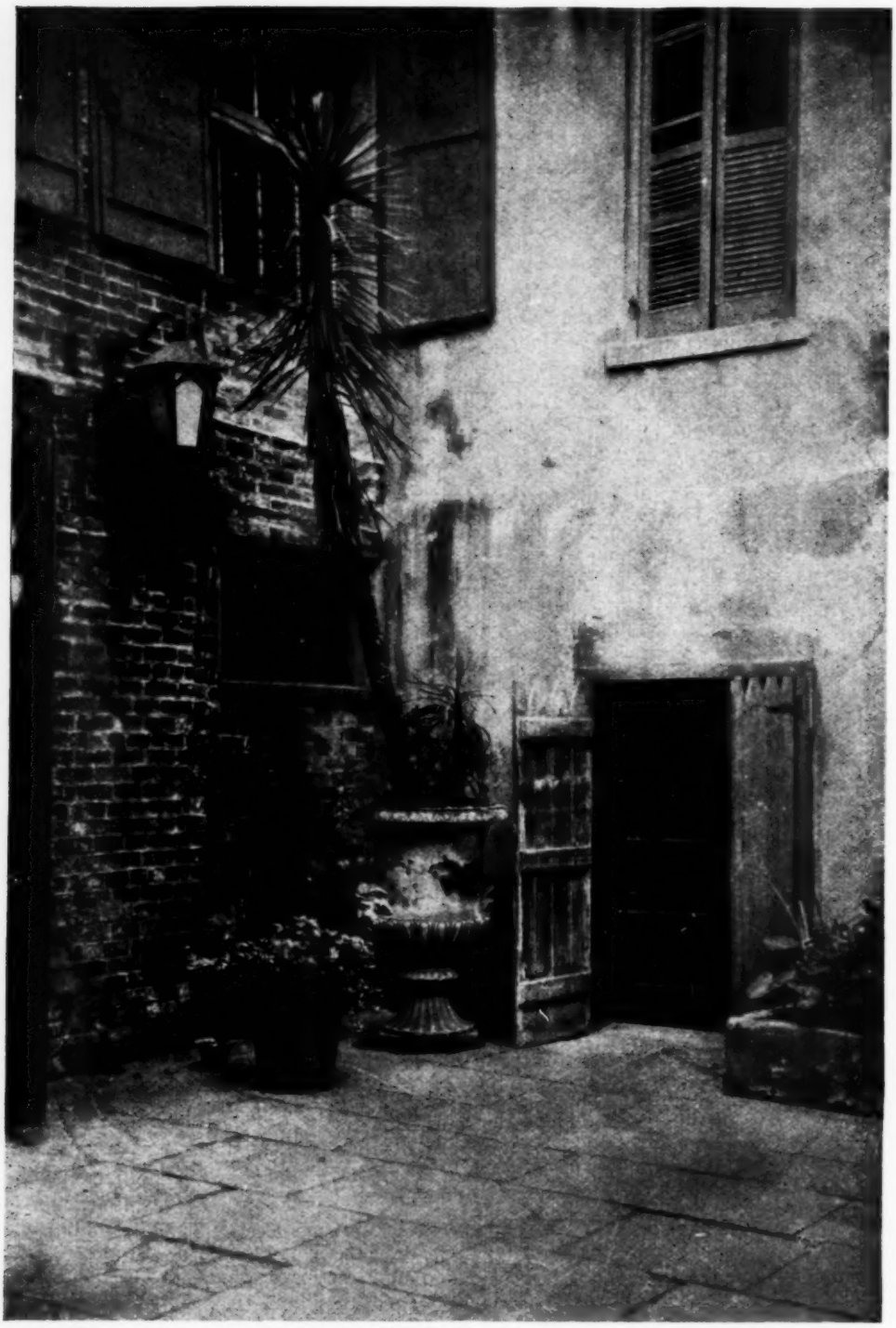
New Orleans, the Hostess City, Offers Many Attractions

PARTICULARLY fortunate are those who will attend the meeting of the American Hospital Association this year. It is to be held in perhaps the last of the individual cities of the country, certainly one of the remaining ones, and a city that has figured over a period of more than a century in the history making of the United States

New Orleans, a city of upwards of 500,000 population, lays claim to being America's most interesting city and this boast is well founded. The city lies on the Mississippi River near the Gulf of Mexico, it has a marvelous temperature, it has plenty of quaint streets and scenes and for those who insist upon becoming historical it has enough places to visit to keep him or her on the run from morning until night.

This year as in years gone by the American Protestant Hospital Association, the American Hospital Association, the Occupational Therapy Association, the Children's Hospital Association and the American Association of Hospital Social Workers will all meet in New Orleans and at approximately the same time. The opening of the American Protestant Hospital Association will take place on Friday, October 17; the meetings of the other groups will begin on Monday, October 20. The Protestant group meets at the Hotel Roosevelt while the other groups will meet in the new municipal auditorium only a short distance from the center of the city. The attendance this year is expected to be as great as that of any previous year and in addition the South and the Southwest will be represented in great numbers.

Travel to New Orleans is particularly comfortable. The Illinois Central Railroad runs a train known as the Panama Limited, which leaves Chicago at about noon arriving in New Orleans the next morning and this train is de luxe in every sense of the word. Nothing has



This patio is a part of the Arts and Craft Club, which amid delightful old world surroundings, is developing appreciation for the artistic possibilities of the Old City.

been omitted and the service is excellent. Other lines also have good trains from all points of the United States.

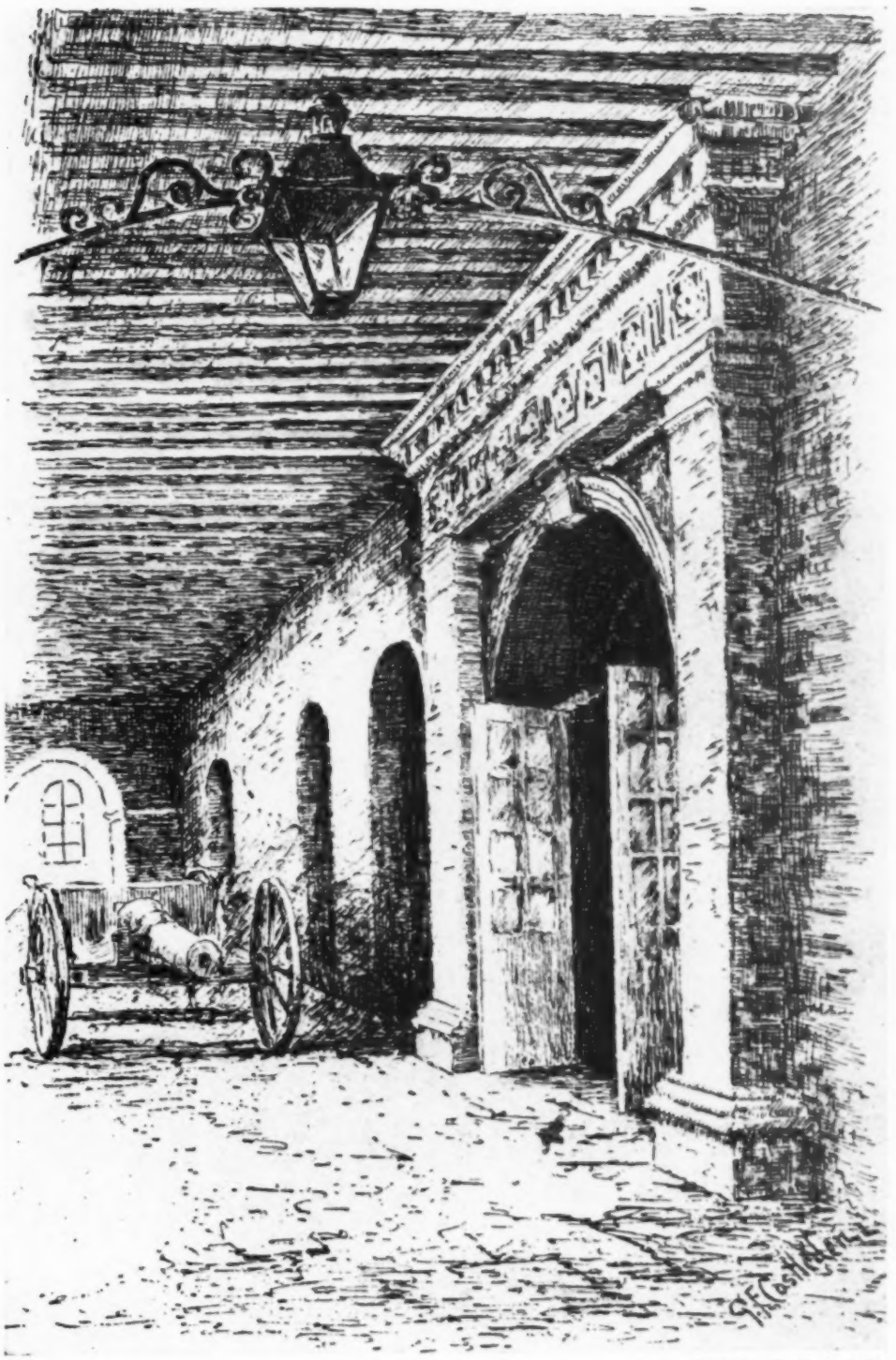
A most attractive tour can be taken by those having a little leisure and living in the East. Boats leave frequently from New York and Philadelphia for New Orleans and a few days' ocean voyage brings the delegate to the convention city without the use of railroads. Automobile travel is also pleasant and undoubtedly will be indulged in by many of those who live within a radius of from 300 to 400 miles. Some of those who live in Illinois and Indiana have signified their intention of going by automobile and of course those of the Southern states will use this mode of transportation.

Airplanes will also bring many travelers. When the associations met in San Francisco the airplane was used by several of the braver souls and with the great advancement in this mode of travel in two years, it is expected that many more will fly all or part of the way to the convention.

The programs for this year's meetings have already been presented in THE MODERN HOSPITAL and their worth has been weighed so that there is no need to dwell upon this point. It is sufficient to state that the topics chosen have never been equaled and the meetings will be more beneficial than any similar group of hospital meetings. It is important, however, to dwell upon the creature comforts of the visitors.

New Orleans in October is at its best. The climate is delightfully pleasant, the days comfortably warm and the evenings delightfully cool. The walks through the Vieux Carré, with all of its interesting stores and curiosity shops, its historic buildings, its wonderful old churches, its cool patios and its laced porches, is always intriguing and interesting to the visitor in old New Orleans.

The French restaurants, far-famed for their delightful dishes and their hospitality, are pre-



A view that has both historic and theologic interest is this sketch of the monastery of the Capuchin monks in which is quartered a gun used by Confederate soldiers.

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paring special menus for the guests. The old French places, Antoine's, La Louisiane, Gallatois' and Arnaud's, have long attracted people from all over the world, and dining in the old French quarter has been a pleasure that all visitors to New Orleans have at one time or another enjoyed. The early morning visits to the French Market, with coffee and Irish bacon at Madame Begues' have grown to be a tradition in New Orleans that is almost a century old. The delightful luncheons served at the Patio Royale and the Vieux Carré are always enjoyable. Across Canal Street from the old French quarter is Kolb's, which is noted for its old German dishes, and other wonderful restaurants. Dining in the hotels, at the Roosevelt, Monteleone, St. Charles and on the roof of the Jung, is a delightful experience.

The beaches along Lake Ponchartrain have great attractions in the cool evenings of autumn in New Orleans and a drive to some of the cafés and a dinner in the open, composed of dishes well prepared and ideally served, lend an added charm to the city.

New Orleans is particularly noted for its wonderful parks, the City Park and Audubon Park being particularly worth while. They are among the most beautiful in America. The museums and libraries are well worth visiting. The paintings and works of art in the Delgado Museum in Municipal Park contain many old masters. The museum in the Vieux Carré contains many things that are connected with the history of New Orleans under the five flags.

Places near New Orleans are full of interest. It is only a short run by motor or by train to many charming spots. Across the country is Chalmette, the battle ground of New Orleans, and the wonderful drives over the shell roads are all interesting and can be enjoyed at a small expenditure of time and money.

Not the least of the advantages of the convention is the proximity of the new convention hall

A driveway on the historic field of the Battle of New Orleans is bordered with oak trees picturesquely draped with Spanish moss. This is said to be the finest and largest grove of oaks in the world. The picture shown below is a South Louisiana waterway scene near New Orleans.

to the hotels. All the hotels at which delegates are likely to stay are within easy walking distance of the auditorium. There is no finer auditorium in America than the one just completed at New Orleans. The acoustics are perfect. It is situated where the noises of the traffic of the city are not disturbing. It is beautifully built and wonderfully arranged for the accommodation of conventions.

The hospitals of New Orleans present attractions to the visitor interested in hospitals, from Charity Hospital, part of which is about one hundred years old and is still in use, to the finest types of most recent and approved hospital architecture and arrangement. New Orleans is the medical center of the South. Its fine universities and those large hospitals have afforded for many years the best of opportunities for the training of medical men and hospital people. Arrangements are being made for visits to each of these hospitals. Their doors will be open during the entire week and delegates will find wonderful hospitality and a warm welcome extended by all of the New Orleans institutions. Visits to Charity Hospital, Touro Infirmary, the Hôtel Dieu, the French Hospital, Illinois Central R. R. Hospital, Mercy Hospital, Eye, Ear, Nose and Throat Hospital, Flint-Goodrich Hospital, City Hospital for Mental Diseases, U. S. Marine Hospital, Southern Baptist Hospital, De Paul Sanitarium and other hospitals will be particularly worth while. No better choice could have been made for the meeting place of the 1930 convention of the American Hospital Association than New Orleans. It will be a week of profit and a week of pleasure.

The association is arranging a program of unusual interest. The afternoon session on Monday will be a session devoted to reports of the several committees and to the transactions of the routine business of the association. The meeting on Monday evening will be held in the auditorium. This is the president's evening and arrangements are being made to have the address of welcome made by Governor Long of Louisiana and Mayor Walmsley of New Orleans. Doctor Parnall will deliver his presidential address and will acknowledge the addresses of welcome of the Governor and the Mayor. The musical arrangements for this meeting will include some fine artists in the musical world. The presidential address will be followed by an address delivered by a nationally prominent person who is interested in hospitals and has a thorough understanding of hospital problems and hospital care of patients.

On Tuesday morning the first sessions of the

A typical section of the Vieux Carré is this scene on St. Peter Street. To the right is the old Spanish Arsenal and to the left, the Little Theater.

round tables will be held. There will be three round tables upon important hospital subjects conducted in the two meeting halls on the second floor and one on the first floor. These will be under the supervision of Dr. W. L. Babcock, coordinator and G. W. Olson, his assistant; Dr. R. C. Buerki, coordinator and Asa S. Bacon, his assistant, and Howard E. Bishop and Dr. Malcolm T. MacEachern, his assistant.

Open Meeting Planned for Tuesday

Tuesday afternoon will be devoted to the program submitted by some of the sections. On Tuesday evening there will be an open meeting and the program will be under the direction of the trustees' section, of which Judge Charles Rosen, president of the board of trustees, Touro Infirmary, New Orleans, will be chairman. There will be four addresses. One will be by a member of the Committee on the Costs of Medical Care; one by a well-known publicist on the profits of medical care; the third address will be by a philanthropist who is much interested in hospital development; the fourth address will be delivered by the governor of one of the Southern states upon "The Responsibility of the State for Its Hospitals."

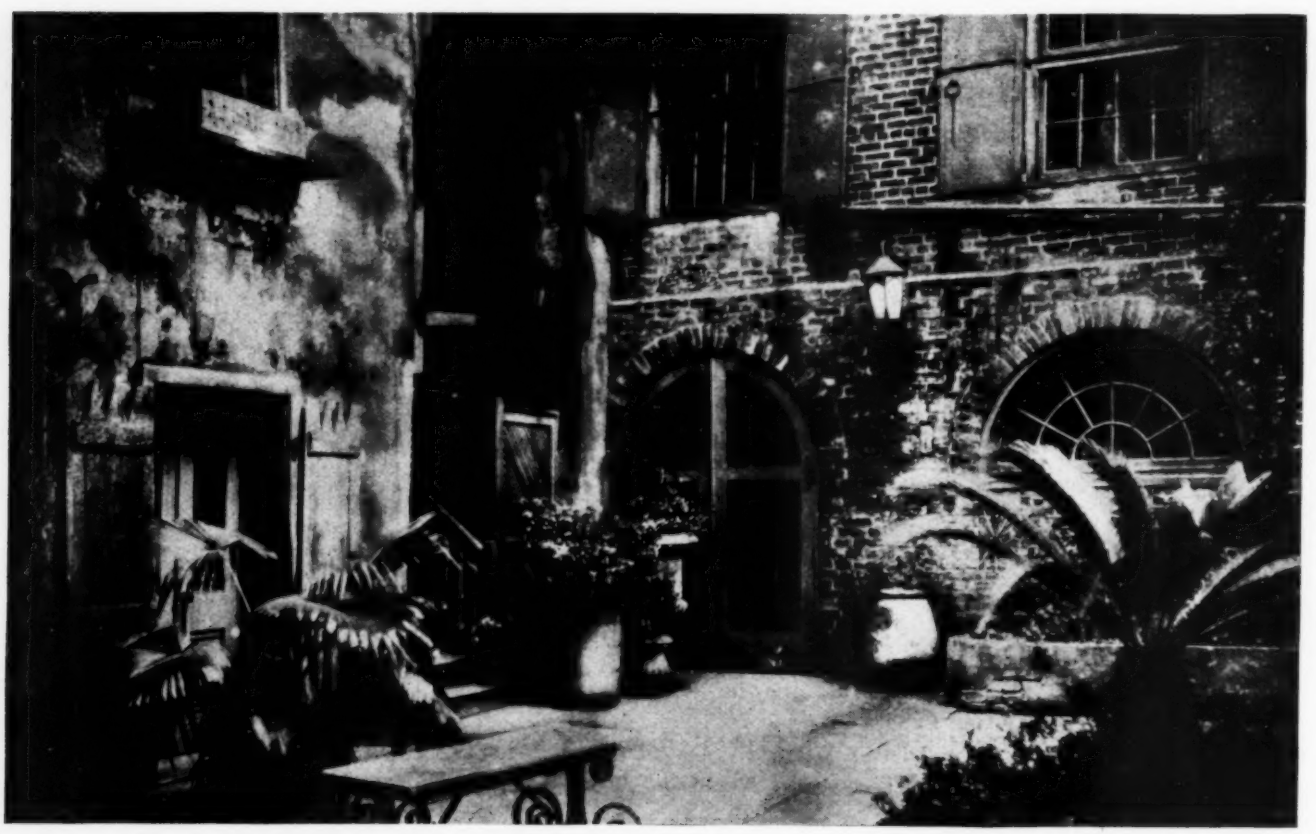
On Wednesday morning the round table sessions will continue with the same coordinators and with the same assistants in the same halls.

Wednesday afternoon will be given over to the meeting of some of the sections of the association and at 5:30 p.m. the delegates will assemble on board the steamer *Capitol* for a trip up the Mississippi River. This trip will take the place of the annual banquet. Provisions for the entertainment of the delegates will be made on board this ship, which has three large decks. One deck will be given over to dancing. The upper decks will be given over to dining. The lower deck will be given over to various forms of entertainment, including musical numbers and other features of interest.

Famous Creole Dishes to Be Served

On board the ship there will be an oyster bar, where fresh oysters will be served, coffee, sandwiches and other refreshments and several Creole dishes peculiar to Louisiana will be offered to the guests. Among these dishes are the famous Creole gumbo, bouillabaisse, turtle soup and other dishes that are famous wherever epicures dine.

Thursday morning the round tables will again be held as on the previous mornings, under the same coordinators and assistants. Thursday afternoon will be given over to the programs of the sections and on Thursday evening the nursing section will hold its meeting in the auditorium.



This quiet patio is in the old Brulatour mansion, which in days of old was the home and trading place of the wine merchant.

The Memorial Auditorium where most of the meetings will be held stands in the rear of Beauregard Square, where before the Civil War, Negro slaves danced their colorful voodoo rites.

The programs submitted by the different sections have unusual merit. The subjects will be presented by persons prominent in their respective fields. In fact, no program has been offered to any hospital convention that equals in value the one that is being prepared for the New Orleans convention.

Delegates Will Visit Cuba and Panama

On Friday morning the business of the association will be transacted. The afternoon will be given over to the visits which the delegates desire to make to places of interest in and about New Orleans. On Saturday those who are to make the Cuban and Panama tour will board the ship at the United Fruit Company's docks and sail at one o'clock in the afternoon.

Both the commercial and the educational exhibits will be as large as the accommodations of the convention hall will permit. The commercial exhibit will include some 155 firms who will place on display the latest equipment offered for hospital use. Several additional lines have been introduced that are of particular interest to hospital people, one of which is the exhibit of the National Tile Association, which will include floor tiling and ceramics. Another exhibit of special interest that is being prepared is the exhibit of sound films for the entertainment of patients in hospitals. They are arranging an apparatus whereby the pictures may be thrown on the walls of the private rooms for the entertainment of private patients. Another interesting display will be offered by the National Fire Underwriters' Association, showing all the devices for the prevention of fires in their institutions and for the care of x-ray films.

An excellent reception is promised for all those who attend. The civic clubs, such as Rotary, Kiwanis and Lions, are preparing special programs for the delegates and other organizations will join in the entertainment. Many of the state associations are planning special breakfasts and luncheons this year. The Illinois-Wisconsin-Indiana Hospital Associations will hold a breakfast on Tuesday morning at the Hotel Roosevelt and the Texas State Hospital Association will gather for a breakfast on Wednesday morning. Announcement of other similar functions will be made at the meetings.

Theory and Practice in the Training of Hospital Executives

What are the qualifications for a successful hospital administrator and can a course of training be established to give him such qualifications?

Dr. H. L. Eason, superintendent, Guy's Hospital, London, sets forth his ideas on the subject of "The Training of Hospital Officers" in a paper given before the joint conference of the British Hospitals' Association and the Incorporated Association of Hospital Officers, as follows:

"The secretary [superintendent] needs many qualities, human qualities principally—vision, a general spirit of charity, an interest in hospitals and hospital life and an extraordinary deal of tact and understanding.

"Will any course of training enable a hospital secretary to deal with a matron? Will any training enable a hospital secretary to lead his board of governors, who in his heart of hearts he thinks a most useless set of people? Will any training enable him to make them go the way he wants them to? That is the problem.

"The hospital administrator must have a particular type of intellect. Hospital officers, however they start, do develop into people with the most extraordinary interests and knowledge of all sorts of things. They have to learn to be a bit of an architect, a bit of a lawyer, a bit of a plumber and bricklayer. They must know something about everything that is going on in the hospital."

What Service Should Be Provided Patients of Limited Means?*

By LEWIS A. SEXTON, M.D.
Superintendent, Hartford Hospital, Hartford, Conn.

IN CONSIDERING community responsibility for the cost of hospital care, we assume that every community has reached a state where the care of the indigent sick is taken for granted, and that public funds and private benefactions exist for the discharge of this as its first responsibility. The care of persons of limited means, the assistance of that great mass of people who occupy the strata between the indigent and the well-to-do, is a vastly different problem.

Fifty years ago there were 157 hospitals in the United States and Canada with a bed capacity of 35,453. To-day there are approximately 8,000 hospitals with a bed capacity of more than a million and a quarter. Fifty years ago the average stay in the hospitals for each patient was about fifty days and the death rate was from 25 to 50 per cent. To-day the average stay is about fourteen days and the death rate is 5.5 to 6 per cent. At that time hospitals were essentially for the indigent, but step by step they have come all the way from poorly appointed institutions of last resort to veritable palaces equipped with all the luxuries and conveniences that are to be found in the homes of the wealthy.

The modern hospital is no longer a single unit institution. It comprises various services—the out-patient department, the laboratory, the x-ray department, the physical therapy department, the department of occupational therapy, the dietary department, the electrocardiographic department, the basal metabolism department, the dental department, the training school for nurses, the social service department and the history department.

Hospital's Responsibility Greater Than of Old

It is easily seen that the hospital to-day assumes a much greater responsibility than it formerly did in the care and treatment of its patients. The numerous recent discoveries in the methods of diagnosis and treatment must find a place in every well regulated institution, and trained specialists must be always available.

In addition to this, much is done now for the patients' entertainment. Many hospitals have libraries bountifully supplied with all types of literature, which is valuable in diverting the minds of the patients into wholesome channels and in resting brains that are worried. Radios have been installed so that each patient may have his own headpiece for entertainment and instruction. Convalescent hospitals have been built in the country where patients may spend a few days in the sunshine and open air before they return to duty.

The Hospital's Place as an Educator

These are some of the things that have increased the span of human life twenty-one years during the last generation, and it may be safely predicted that with the great improvement hospitals are making with their out-patient departments and public health programs, this increase will continue at an even more rapid rate during this and the next generations.

The hospital's place in the community as an educational institution must not be overlooked. There are now twelve states in which medical colleges will not confer the degree of doctor of medicine until their graduates have had one additional year in a first class hospital. There are more pupil nurses in the training schools of this country to-day than there are women students in all of our colleges and universities combined.

More than a million dollars a day is being spent for new hospital construction and equipment. The 8,000 hospitals in this country are caring for approximately 12,000,000 people annually. Now let us see what hospitals are doing to keep their charges to patients as low as is consistent with good service.

We have known for years that the burden of sickness falls least heavily on the very rich and the very poor. The former can secure excellent medical care by paying well for it, and the latter can get care scarcely less admirable and pay nothing for it. It is upon the middle class that illness falls as a severe financial burden. The change occurring in the physical structure of hospitals is perhaps the most striking of the va-

*Read at the New England Health Institute, Boston.

rious adjustments that are being made to meet these conditions.

The traditional clear-cut division of hospitals into a series of large open wards on the one hand and a number of private rooms on the other is rapidly changing into a series of accommodations less public and less private. All well planned new hospitals now make provision for the three types of patients with a marked tendency to the elimination of the large open ward and a corresponding increase in semiprivate accommodation as well as an increase in relatively inexpensive private rooms.

Changing From Ward to Semiprivate Rooms

In 1908 about 30 per cent of all hospital beds were in large wards; in 1928, two decades later, only about 8 per cent of all beds were in large wards. The percentage of beds in semiprivate rooms increased during the same period from 10 to about 25. These figures clearly indicate the trend in hospitals toward better and less expensive care for the great middle class. Undoubtedly the unit costs to the hospitals will be increased, which means rate adjustments and a greater responsibility for the general public, but since these changes are being effected for the benefit of the majority it is safe to predict that the costs will be met.

Much has been said and written recently on the mounting costs of hospital and medical care. THE MODERN HOSPITAL recently made an analysis of the first 100 private patients admitted in October to 100 general hospitals in different parts of the country, and it was found that the average cost to each of these 10,000 patients was $5.48 per day, which cannot be said to be an excessive charge. In order to lighten the financial burden many hospitals are now reducing the cost to their patients by a reclassification of services formerly regarded as extras or specials, into flat rate charges. Charges for x-ray and laboratory work, operating room fees, and the cost of special diets and medicines are now included in a reasonable maximum charge to semiprivate and ward patients.

Methods That Help to Lower Costs

Every sort of experiment has been and is being tried to maintain a high class of efficiency in the care of the sick. Group nursing, where one graduate nurse is employed to take care of three or four patients who share the expense of her services, has been tried by many institutions and found successful; countless numbers of nurses' helpers or aids have been employed to ensure the patients getting the best at the least cost; the partial payment plan has been adopted by practically all hospitals, allowing the patient all the time he requires to pay his hospital bills.

Now, when we consider what constitutes the responsibility of the community in the support and furtherance of this great humanitarian program, we find that the hospitals are confronted with certain well defined needs.

The amount of service any hospital may render to its community is in direct proportion to the amount of income the hospital may have. The large proportion of the income of the average hospital depends upon the amount of money received from the patients. Patients should pay their bills with the same promptness with which they expect the hospital to render them service. The most difficult accounts to collect are those from the different types of accident cases, automobile accidents coming first, and workmen's compensation and industrial accidents next. All hospitals are familiar with the constant attempt to evade financial responsibility made by both the injured and the man causing the injury. Adequate laws should be enacted to protect the hospitals in cases of this kind. Every state should interest itself in the passage of a law that will make liability insurance compulsory for every automobile driver and will provide for a lien on accident and liability insurance policies in favor of hospitals. Every state and province should have an act to provide that the liability of the employer in all workmen's compensation cases for hospital service shall be the amount it actually costs the hospitals to render the service.

Endowments Urgently Needed

There is a growing need of additional endowment for all hospitals. A recent study of benevolent contributions throughout the United States discloses the fact that only seventy-four out of every thousand such contributions are made to hospitals. This is regrettable and it clearly demonstrates that the needs of our thousands of institutions have not been sufficiently impressed on the minds of the people who are capable of helping them. Only in recent years has the public begun to ask itself why a part of the great stream of money that philanthropists pour into college endowment funds should not be diverted to hospitals. After all, what do education and money mean without health?

There is such a thing as doing too much for people. After a long period of overindulgence they become possessed of a contentment that develops into an inertia that makes of them public charges. Such persons must not be lost sight of, for it is as essential to imbue them with a

little self-respect as it is to impress upon the man in mediocre circumstances the importance of not sacrificing all he possesses to pay for private room accommodations.

Probably fewer people should be sent to the hospitals. We are all familiar with the conveniences that hospitals offer and the great satisfaction physicians experience when their patients are within their walls. The usual complete quota of diagnostic facilities and the ease and convenience of securing consultations at once commend themselves to all practitioners, but we must not lose sight of the fact that all of these things add to the cost and that hospitalization should not be imposed upon needy families until the physician has exhausted all the therapeutic means at his command without effecting a satisfactory solution.

In the last analysis we must reckon on having always with us the poor, the rich and the great middle class, and we must develop along whatever lines seem best for the last mentioned. They have always been the backbone of the commonwealth, they probably always will be, and as such they are deserving of our best efforts.

Californians to Vote on Tax Exemption for Hospitals

Voters of California will pass upon a constitutional amendment which provides tax exemption for nonprofit hospitals of the state at an election to be held November 4. This amendment will appear on the ballot as Proposition 8.

Tax exemption is already practiced in forty-five states of the Union. Except California, only two states tax nonprofit hospitals. These two states have few residents and few hospitals. Thirty-eight states give complete exemption and seven states give partial exemption to nonprofit hospitals.

Prominent hospital administrators of California comprise the committee which is working for the amendment. The committee points out that hospital patients bear the burden of the taxes imposed. It calculates that the tax in each hospital averages nineteen cents per patient-day. At St. Vincent's Hospital, Los Angeles, the tax rate is as high as fifty-five cents a day or a bill of $6.60 to the average patient; at the Providence Hospital, Oakland, the tax is as high as fifty-eight cents a day, or a bill of $6.96 to the average patient.

Contrasting this tax rate with free service performed by the nonprofit hospitals, the committee declares that in 1929 sixty-four nonprofit hospitals in California gave free service to the extent of more than $2,500,000. Twenty-eight nonprofit hospitals conducting out-patient departments provided for 343,225 visits at a net cost to the institutions of $352,911.61. Sixty-four nonprofit hospitals dispensed free service to free and part-pay patients at a total cost of $1,899,842.34. Thirty-three nonprofit hospitals conducting nursing schools incurred for the education of 1,910 student nurses, of whom 679 were graduated in 1929, a net expenditure of $382,000. The sixty-four nonprofit hospitals treated 8,259 accident emergency cases in 1929.

Comparison of the taxes paid by the hospitals with the amount of free service performed by them is presented as a decisive argument in favor of tax exemption. Total taxes paid by sixty-four nonprofit hospitals amounted to $325,435.60 in 1929. This sum was less than the cost of maintaining the free out-patient clinics of these institutions; only 12½ per cent of the total amount they give out annually for free care of the sick and for essential educational services, and less than 1/10 of 1 per cent of the total municipal and county tax receipts in California for one year.

In the selection of its material covering the subject of tax exemption, the committee has compiled an interesting summary of statistical and financial reports of the sixty-four nonprofit hospitals for the year 1929, as follows:

City and county taxes paid	$ 325,435.60
Assessed valuation	$7,736,340.40
Number of beds and bassinets	7,984
Number of patients cared for	153,048
Average number in hospitals at all times	4,970
Number of days' treatment rendered	1,780,773
Value of free and part-pay in-patient service	$1,899,842.34
Net cost of out-patient service	$ 352,911.61
Total cost of free service to patients	$2,252,753.95
Number of out-patient visits	343,225
Average number of student nurses	1,910
Net cost of conducting nursing schools	$382,000
Number of student nurses graduated	679
Number of emergency cases treated	8,259
Total number of hospitals reporting	64
Total number of nursing schools	33
Total number of out-patient departments	28
Average tax bill per patient day	$ 0.19
Average number of days' stay in hospital	12
Amount of tax paid by average patient	$ 2.28

Louisville's Joint Hospital Committee and Its Work

What the Joint Hospital Committee, which was formed in Louisville, Ky., three years ago set itself to study carefully with a view to improving hospital service is related in a recent issue of the *Kentucky Medical Journal.*

The object of the physicians who organized the committee was to afford a closer cooperation between the staffs of the various hospitals, whereby subjects of mutual interest to all hospitals could be discussed and the problems of each hospital considered. Each hospital has two representatives on the joint committee. The following matters were thought worthy of consideration:

Standardization of hospital records for uniformity, so that a close study of results could be obtained; a study of equipment with special reference to any new and valuable appliances that might be employed; the study of more adequate compensation for the hospital care of cases of industrial surgery; the duties of the interns; the obligation of the staff to the interns; the obligation of the staff to the nurses and their training; the obligation of the staff to the hospital; the obligation of the hospital to the staff; the obligation of the hospital, its staff, interns and nurses to the patients.

How the Physiotherapy Department Can Best Serve the Hospital

By S. CHESTER FAZIO
Superintendent, Rockaway Beach Hospital, Rockaway Beach, N. Y., and
RICHARD RESLER
Architect, New York City

THE advisability of including a physiotherapy department in a general hospital was a subject of much discussion about four or five years ago. Now, the importance of such a department is generally accepted and new hospitals invariably allow space for it.

It is evident, however, that one factor is not yet appreciated, namely, the importance of not merely allowing space for this department but of insisting that provision for the development of an adequate and well arranged unit be made at the time the building is planned. No hospital board would accept plans upon which there was but a casual notation that "this room might be used for an operating room" or that "the laboratory would probably be here." Apparently many plans are accepted, however, that do not make more definite provision than that for the physiotherapy department.

For the purpose of this article x-ray and physiotherapy laboratories may be classified as follows: insurance company laboratories, commercial laboratories, laboratories conducted by physicians in private practice and those operated in connection with hospitals. Unfortunately there are still communities with no facilities of this nature within a radius of several miles.

How Industry Meets the Situation

Practically all states have an enactment, corresponding to the Compensation Act of the State of New York, that compels employers in certain industries to insure their employees. Many insurance companies maintain physiotherapy departments for the benefit of their clients, but their offices are usually in the larger cities. An employee may be injured while at work in a community that does not have these facilities and that is several miles from the city wherein the insurance company has its offices. The distance will necessitate considerable traveling and will involve time and expense. The condition of the patient may be such that he will be unable to travel for days or even weeks. The delay in treatment is obviously not conducive to rapid recovery. Again, it may be impossible for the patient to receive treatment, as the office hours of these laboratories are frequently from 9 a.m. to 5 p.m., an inconvenient time for an employee to leave his work. Furthermore, although insurance companies treat their clients without charge, few, if any, will assume responsibility for either transportation or hotel charges, and many patients are therefore prevented from receiving treatment because of the expense.

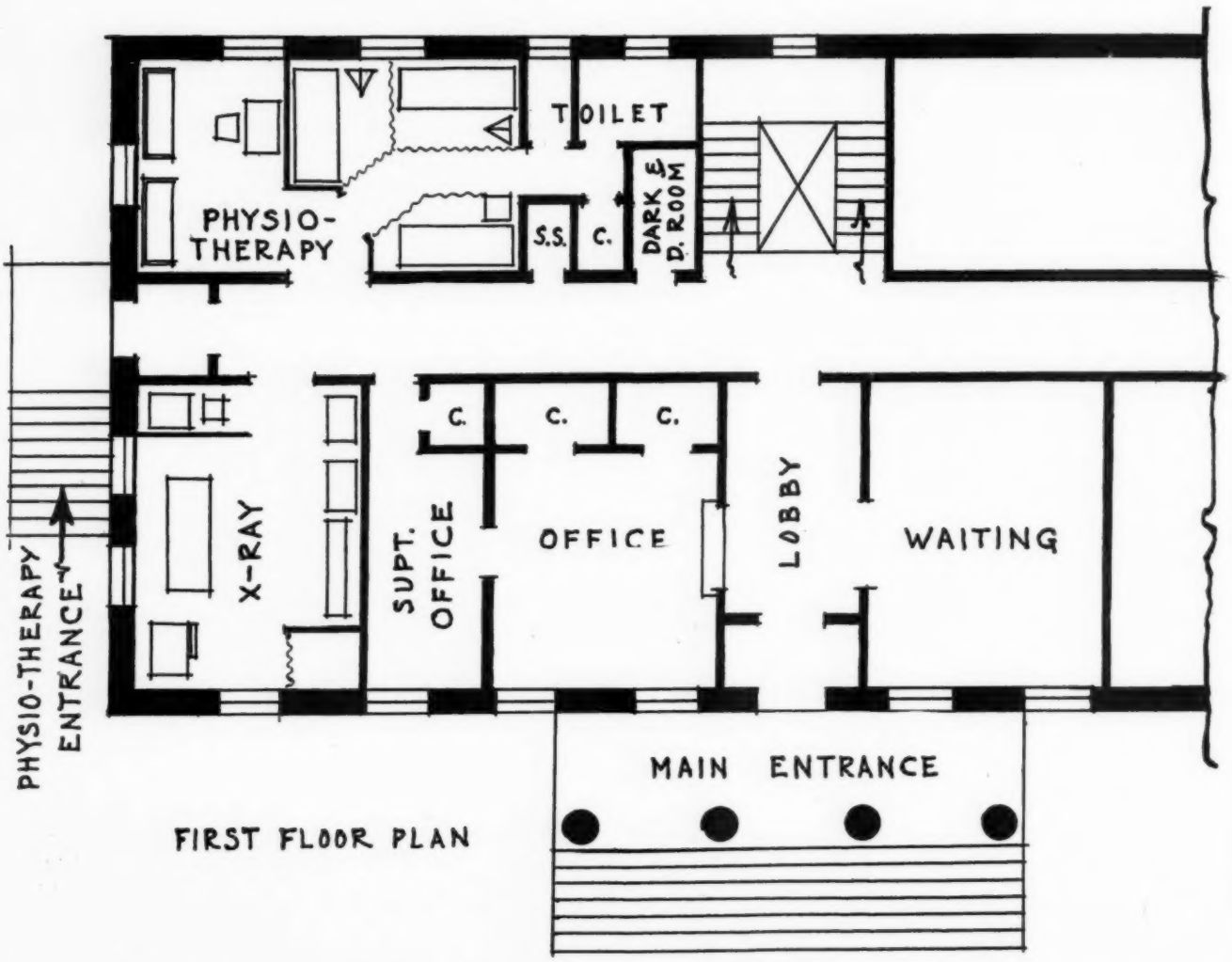
Why the Hospital Should Provide Physiotherapy

The same objections regarding traveling, time and transportation expense apply to commercial laboratories, which also are usually in the larger cities. Their charges are also beyond the means of many persons.

The objections regarding traveling and time are removed when a physiotherapy laboratory is conducted by a physician in private practice in a community, but the fees may prevent many of the residents from availing themselves of the service. If the hospital does not maintain this department, the staff must necessarily refer such cases to the private physician. This arrangement may prove detrimental to the hospital as it may be the hospital's own patients who require after treatments of this nature. The patient loses touch with the hospital and is likely to refer others to the physician rather than to the hospital.

On the other hand, many physicians practicing in the vicinity of a community hospital would appreciate having these facilities within a reasonable distance for their patients. If the hospital supplies this service at a moderate cost, the relation between the hospital and the physicians not officially connected with it would frequently be improved and the arrangement would prove of mutual benefit.

Furthermore, the hospital will probably profit financially, as the community will learn to frequent the hospital and will become more familiar



FIRST FLOOR PLAN

with the service it offers. Contact with former patients is more closely maintained as they come for treatments following a period in the hospital or for occasional treatments for minor ailments. Subsequently, subscriptions are likely to increase as the contacts thus established are developed. Of even greater importance is the fact that this department will in all probability soon pay for itself and may become a source of steady income.

What Rockaway Beach Hospital Has Done

At the Rockaway Beach Hospital, Rockaway Beach, N. Y., the x-ray service has carried its own expenses; the physiotherapy service has been in operation only a short time but the indications are that it will prove self-supporting and that the income from these two services will help to balance the deficits that might arise in other departments.

In order to function efficiently and economically the physiotherapy department must be properly located, for the convenience of both the in-patient and the out-patient service. As in all problems pertaining to hospital administration, the location of this department will depend largely upon the individual requirements of each hospital. The main issue is generally whether the department shall be on an upper or lower floor. This question is usually determined by the expected preponderance of demand, that is, whether the demand will be greater from the in-patient or from the out-patient division.

An upper floor may be more advantageous if little or no out-patient work is contemplated. Out-patient service is essential, however, if the department is to serve the community and the hospital to the best advantage. A lower floor is then the preferable location, otherwise the out-patients must travel through the building. This necessitates the use of the elevator, creates noise and sometimes results in confusion unless the patients are conducted by a nurse or an employee, a procedure that wastes the time of the personnel. The in-patients can be brought to the department at hours that will not conflict with the out-patient service, with less annoyance to all concerned. In fact, in addition to the stationary equipment of the physiotherapy department, several hospitals

have portable equipment with which many of the in-patients can be treated.

This department should be situated so that the line of travel is neither awkward nor unpleasant. The patients should not have to pass the morgue and autopsy or accident receiving services. The route should be as direct as possible so as to avoid the confusion caused by out-patients wandering about the corridors. It is also advisable to have the route under the surveillance of a floor nurse or clerk.

A desirable physiotherapy suite should consist of a waiting room, dressing rooms and toilets, treatment and examining rooms, an office and viewing room, a dark and developing room, a utility room and a storage room. The number of rooms will, of course, depend upon the extent of the work of this department.

Planning a Department

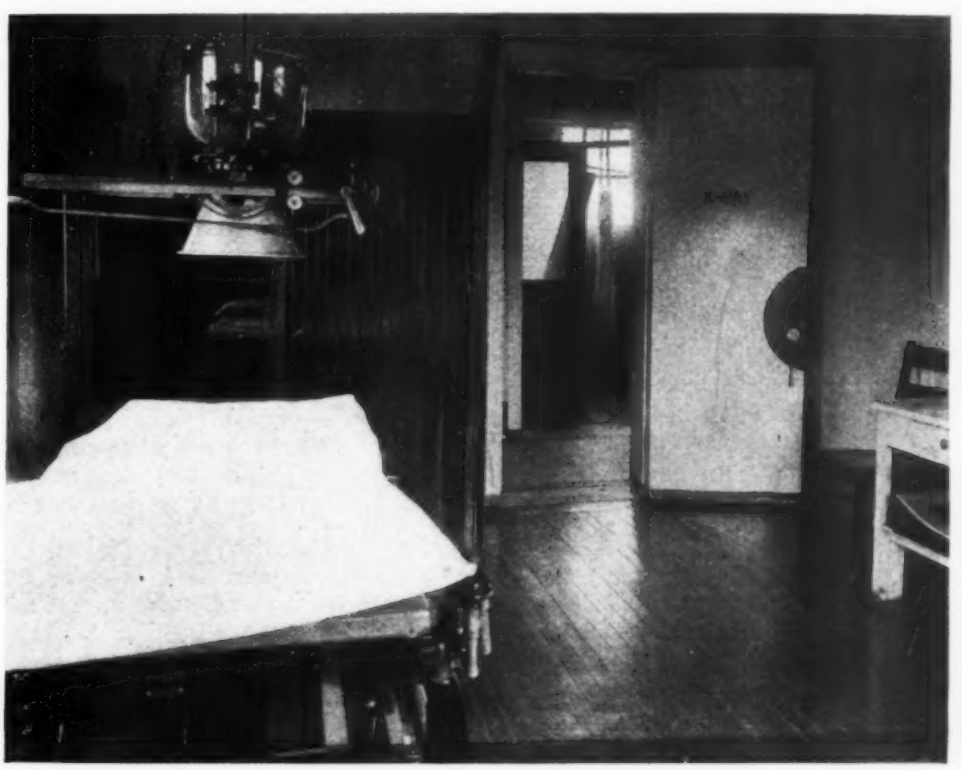
The waiting room should be well ventilated and attractively furnished and should give direct access to the dressing rooms. A dressing room with an adjacent toilet should be provided for both male and female patients. If other hospital toilets are near this department, additional toilets can be omitted from this suite if space is limited.

It is not advisable to install x-ray and physiotherapy equipment in the same room. These two services are under the supervision of one physician in most community hospitals, and as they cannot be operated simultaneously there would be unnecessary delay for both staff and patients. Furthermore, protective treatment of the walls, ceiling and floor must be considered in regard to the x-ray room. The number of surfaces thus treated will depend upon the rooms in the immediate proximity. In some instances all surfaces will have to be treated, in others it may be necessary to treat only the floor, the ceiling and two walls, or three walls and the ceiling. If the room used is sufficiently large to accommodate both services, this would cause the expense of appying insulation over an unnecessary footage of surface.

How to Place the X-Ray Machine

The x-ray machine should not be in the treatment room if it is possible to install it in a ventilated compartment adjoining the x-ray room. The noise and the odor of the ozone created by the machine are apt to alarm the patients. It is also vastly better for the operator to be outside the room, especially if the department is a busy one with numerous exposures a day. It is highly desirable to have a window near the dial board so the operator can observe the patient and give directions or assurances. If provision for the operator cannot be made outside of the room, he must be protected from the rays by a partition treated in the same way as the walls are treated.

The office desk and viewing boxes can be included in the x-ray room, but this arrangement would delay the routine. If they are kept in a separate room, one patient can be interviewed



This well equipped x-ray room is a part of the physical therapy department of the Rockaway Beach Hospital. This hospital is the only one within a radius of ten miles providing out-patient x-ray service to the community.

prior to treatment or an afterview of the films can be conducted while another patient is being treated or examined in the x-ray room.

A dark and developing room is an indispensable adjunct of this suite. It is also important that a utility room be included. Barium compounds can be prepared and administered in this room prior to the taking of abdominal exposures of a patient. Various utensils and instruments used in connection with cystoscopic work and an instrument sterilizer could also be kept here. In this way much corridor travel and extra work would be eliminated for the nurse and others.

The problem of film storage has recently become a prominent topic and the subject of much discussion. Hospital administrators, fire department heads, insurance companies and the manufacturers of extinguishing apparatus and storage cabinets and vaults have all studied the subject from different points of view, with the one idea of producing a system ensuring safety from both fire and fumes. No one solution seems to have been accepted nor is it likely that any one method will be applicable to all hospitals. Local ordinances, the number of films to be stored and other individual conditions must be considered, and provision made accordingly. The present tendency, which seems justifiable, is to recommend that films be stored in especially constructed penthouses on the roof, as the rising fumes are a more serious menace than the possibility of explosion or the spread of the fire.

O. P. D. Patients Are Provided for

X-ray and physiotherapy services did not play an important part in the general hospital when the Rockaway Beach Hospital was originally planned. Provision was made, however, for x-ray service on the top floor conveniently near the in-patients. Little thought was given to the possibility of much out-patient work, but the demand for this service soon became much heavier than that for in-patient service. The inconvenience and undesirability of the location of the x-ray room was soon apparent as the out-patients had to travel through the entire building and pass the operating suite.

Location of Department Is Important

About four years ago the situation became exceedingly troublesome, and it was realized that this rapidly growing service should be on the first floor. Every room on this floor had its definite purpose and no space seemed to be available for this unit. The medical board and the board of trustees then kindly volunteered to hold their meetings in the reception room in order that the board room might be converted to the use of the x-ray service. This was done and the one room was used as a combined office and viewing, examination and treatment room. The x-ray machine was placed in one corner and the operator was protected by a lead lined partition. A small booth in another corner served as a dressing room. An adjacent large closet was used as the dark room. The patients waited in the general reception room.

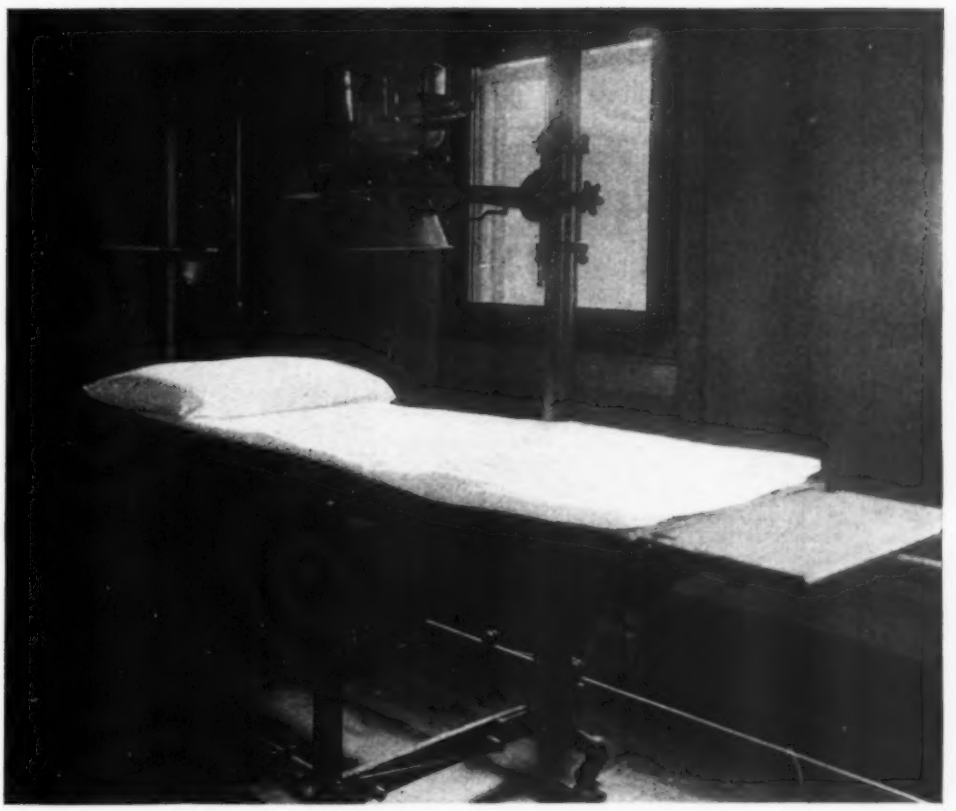
About a year ago a physiotherapy division seemed necessary and was established on the second floor.

Despite the adverse conditions of this arrangement, these services thrived and became more and more in demand. In addition to the effort expended upon these services by the hospital, this may be accounted for in part by local conditions, as the Rockaway Beach Hospital is the only one within a radius of about ten miles that renders out-patient x-ray and physiotherapy service.

The Rockaway Beach Hospital serves a community of about 40,000 persons. In summer the

PHYSIOTHERAPY TREATMENTS GIVEN AT THE ROCKAWAY BEACH HOSPITAL FROM MARCH THROUGH DECEMBER, 1929

Month	*No. of Patients*	*Diathermy*	*Ultraviolet*	*Infra-Red*	*Baking and Massage*	*Galvanic-Sinusoidal*	*Combinations*
March	66	25	10	23	8		
April	54	14	13	23	4		
May	43	7	20	16	0		
June	46	12	11	18	5		
July	109	46	1	52	10		
August	79	21	0	47	11		
Sept.	23	5	2	16	0		
Oct.	26	1	1	24	0		
Nov.	85	45	22	16	2		
Dec.	73	24	13	19	17		



X-ray equipment at Rockaway Beach Hospital consists of a combination horizontal radiographic and fluoroscopic table and a vertical fluoroscope in addition to the equipment in the physiotherapy room.

resident population is about 200,000, as Rockaway Beach is a popular summer resort. During the week-ends this figure is increased to about 250,000, depending upon weather conditions. The hospital has a rating capacity of 125 beds with a yearly average of seventy-five occupied beds daily and it provides approximately 25,000 days' treatment annually, of which about 25 per cent is for charity patients.

Because of the objections previously mentioned regarding traveling a distance for physiotherapy treatment, the permanent residents find this accommodation helpful. It also enables the hospital to give more efficient and satisfactory treatment in the numerous accident cases received in the hospital during the summer. Many of the benefits or drives for hospital funds have been conducted during the summer months and the summer visitors have responded generously.

Additional Space Necessary

It recently became apparent that additional space for the physiotherapy department was again necessary. The importance of this service can be appreciated by the rather drastic changes decided upon in order to enlarge it. The rooms adjoining the present x-ray room (the former board room) were the interns' sleeping quarters. After consideration of the matter, it was finally decided to transfer the interns to the superintendent's suite and add the interns' rooms to the physiotherapy department, the superintendent being moved to a residence near the hospital.

Much inconvenience and expense were incurred by the necessity of altering partitions, installing pipes and making similar changes. The enlarged physiotherapy service is now adjacent to the x-ray service but although conditions are improved this department cannot be as satisfactory as if provision had originally been made for it.

From an administrative viewpoint of efficiency of operation and from an architectural viewpoint of adaptability and economy of construction, we do not hesitate to state that the advisability of considering this department in detail at the time the hospital is planned cannot be too strongly emphasized. The most desirable location can then be selected and sufficient space allowed for future expansion as well as for the anticipated present needs. The general layout, insulation of the x-ray room, pipe outlets for plumbing fixtures, electrical outlets and other details can be provided and the expense of alterations saved. If this department is not to function immediately the rooms can be temporarily utilized for some other purpose.

The personnel of the physiotherapy department at Rockaway Beach Hospital consists of one college trained physiotherapist and one graduate nurse. Many hospitals employ a roentgenologist at a specified salary, but this is

expensive as he must be a medical doctor and a licensed practitioner in this field. The superintendent of this hospital has found it more advantageous to work with a roentgenologist, who is a member of the hospital staff, in the following manner: The hospital furnishes the rooms and equipment for both x-ray and physiotherapy services, the roentgenologist gives his services and the income from the department is divided equally between the physician and the hospital. In this way the hospital is saved the burden of a large salary during the early development of the department and the doctor in charge has a personal as well as a professional interest in the success of the department. The physician has the prestige of being a member of the hospital staff and the hospital is able to recommend him to people who prefer to be treated at a private office rather than at the hospital.

The x-ray equipment at the Rockaway Beach Hospital consists of a combination horizontal radiographic and fluoroscopic table and a vertical fluoroscope. The physiotherapy equipment consists of diathermy, ultraviolet and infra-red lamps, a baking lamp and galvanic-sinusoidal apparatus. The equipment used in the physiotherapy department was generously donated by the community.

O. P. D. Patients Pay After Each Treatment

The hours for out-patient service are from 10 a.m. to 12 noon daily, except on Sundays. Patients pay at each visit as in other out-patient departments. A report of the in-patients treated is sent to the bookkeeper each day in order that the bills may be rendered.

The accompanying table is a complete record of the number of patients receiving physiotherapy treatment from the time this service was started in March, 1929, to the close of that year. These figures do not include those attending the x-ray service. No galvanic-sinusoidal treatments are noted as this equipment was recently installed. The physiotherapy department was enlarged in November, 1929.

Despite this favorable record, the fact must not be overlooked that if the potential income lost because of lack of space and facilities were computed and to it were added the expense of alteration for enlarging the department, and if the time and inconvenience involved were converted into terms of cost, it would be evident that this department has quite a debt to liquidate. Therefore, we again strongly advise that the physiotherapy department receive full consideration in the formulation of the plans of any hospital contemplating a new building.

Too Early Discharge From Hospital as the Basis of a Suit

A case in which a railway employee won a suit recently on the grounds of being discharged too early from the hospital in which he had been a patient is reviewed in the *Journal of the American Medical Association.* After a diagnosis by the company's surgeon that the employee was suffering from "a right inguinal hernia (incomplete)" he was sent to the company's hospital where he was kept in bed for seven days, and discharged. Later he developed a complete hernia, and the suit for damages against the company was the result.

The court found a verdict for the employee. The company appealed. The court of appeals said that the employee could not recover on allegations of negligence as the cause of injury and negligence in treatment, and that if he had any cause of action it was based on a too early discharge from the hospital. On a new trial, the judgment in the employee's favor was based solely on a too early discharge from the hospital. From that judgment the company appealed again.

After a review of the case, the court of appeals held that it could discover no reversible error in the case, and the judgment in favor of the employee was affirmed.

How Mental Nursing Rewards the Nurse

That, in this age of specialization, the nurse undoubtedly will find her economic and intellectual salvation by endeavoring to become an expert in one field is the view held by Marie Olsen, R.N., writing in the *American Journal of Nursing.* In this connection Miss Olsen suggests that mental nursing offers educational, financial and social recompense.

She writes: "For thousands of years psychotherapy has been an affair of priests and education. And to-day psychiatrists acknowledge that they have much help of value to expect from keensighted educators and trained mental workers. With an oversupply of private duty nurses in the United States and half of the annually sick population suffering from some form of mental illness which is 60 per cent curable in the early stages, something ought to be done to meet the need of the most influential neurologists, psychiatrists and pediatricians who are seeking in vain for helpful, intelligent co-workers in the form of sensitive, cultured, preferably college trained nurses."

An Interesting Annual

A flash of wit, a note of seriousness and a sense of dignity—these characterize "The Nucleus," the 1930 annual of the graduating class of the Robert Packer Hospital, Sayre, Pa. Pictures and personality sketches are combined in the right proportion to interest all who may glance within its covers. The book is printed in an easily readable type and is bound in red leather.

"The Nucleus" is dedicated to Lillian B. Yontz, assistant directress of nurses, and begins with a foreword "To the Training School," by Dr. Donald Guthrie, surgeon-in-chief of the hospital.

Howard E. Bishop is the superintendent of the Robert Packer Hospital.

Social Service—A Large Item in O. P. D. Expense*

By HENRIETTA D. BABBITT
United Hospital Fund of New York

HOSPITAL social service, except for the financial aspect, was not a topic the United Hospital Fund study expected to include in its survey. So many interesting features were brought to light, however, that it was decided to incorporate part of the data in this report.

Of course it would be advantageous to know if the social service work done and the personnel engaged in such work in the forty-seven hospitals were comparable, but this phase, being outside the scope of the out-patient department accounting study, was not touched upon. It might be said in passing that the use of the term "visit" by the social service department varied from an interview in the clinic, an investigation in the home, a call at another agency to the collection of hospital bills. When calculating the apportionment for the out-patient department work the number of visits was the basis of calculation. The amount of time consumed in these various services was not counted.

How Financing of Work Was Estimated

The information regarding the financing of the social service work, as collected for the forty-seven hospitals, was imperfect and as a result the figures used in the calculations failed to give the whole picture. Since there were no complete records from which data could be gathered, it was necessary to make estimates from those that were available.

To illustrate at least in part the volume of the work done, the following estimate may be used. In 1927 it was reported that the New York City populace made about 6,400,000 visits to 1,676 clinics, including both the detached dispensary and the hospital out-patient departments. The study showed that 50 per cent of these visits were made to the forty-seven out-patient departments and that about 400,000 of the visits were free. No data were available to indicate what proportion of the patients making pay or free visits passed through the social service department of the clinics. The actual work of social service included many other activities, but the free visits alone made a job sufficiently large to warrant a careful accounting of the amount of service given and the expense involved.

In a previous article on the accuracy of out-patient department costs, it was said that social service was one of the items in the hospital and out-patient department accounting that showed the greatest inaccuracy. This was primarily due to the fact that in almost half (48.9 per cent) of the hospitals, the ladies' auxiliary administered and (in 40 per cent) financed the hospital social service departments. The institutions had no complete and accurate information when these accounts were kept by the auxiliary outside the hospital; consequently the hospital administration had only a vague idea of the real cost, and any estimate as to the "cost per visit" either including or excluding social service work was inaccurate. In one instance the auxiliary in a special hospital was budgeted as paying out approximately 10 per cent of the out-patient department expenses, whereas the auxiliary records showed that the additional funds collected brought the total expenditures up to about 20 per cent of the expense. These extra funds were used for extended activities and not for the usual social service salaries and work.

Responsibility for Social Work Is Divided

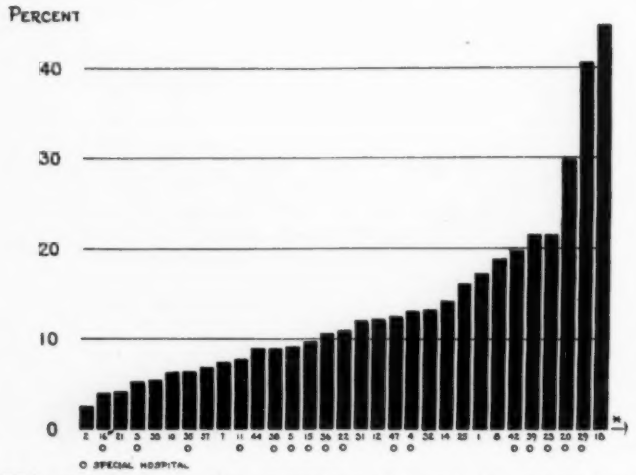
All departmental services in the hospital should be coordinated with the hospital administration so that there can be direct responsibility all along the line. Hospital administration cannot be closely coordinated with the social service department when the director of the department is responsible to, and the department is financed by outside interests, no matter how closely these interests are allied to the hospital. Only 19 per cent of the forty-seven out-patient departments had direct control of the administration and finances for social service. Therefore less than a fifth could make the total allocation of costs or income to the out-patient department.

It has been found advantageous in some well

*This is the last of a series of three articles relating to out-patient department accounting in forty-seven hospitals. The first article, "Wherein O. P. D. Accounting Methods Are Lacking," appeared in the June issue, page 95; and the second, "What Is the Relation of O. P. D. Income to Expense?" in the August issue, page 85.

organized hospitals to have the auxiliary directly represented on the hospital board. This provides a direct liaison between the social service department and the group responsible for finances.

The auxiliaries have in the past contributed generously both in time and in money. Without the help of such funds the hospitals might find some difficulty in meeting the cost incurred by the services so established. It is a question



This graph shows the percentage the cost for out-patient social service is of the total out-patient department cost.

whether the range of the auxiliary control has been seriously considered by the directors and administrators of the hospitals. The general thought has seemed to be that, although the auxiliary may administer the social service department, the hospital nevertheless has control of the situation. In reality, policies have been laid down by the hospital board of directors but the actual responsibility has been vested in officers outside the hospital organization. Apparently the reason for this situation has been the feeling on the part of the auxiliaries that social service can be carried on with more sympathetic interest and greater social vision when it is supervised by the auxiliary than when it is under the hospital's control. While it is recognized that from a social standpoint the patients should be entitled to the best available social guidance, still, from a business point of view, it cannot be overlooked that the accounting for all departments of the hospital work should be done through the hospital. It is therefore advisable that the auxiliaries account for their funds through the books of the institution for the sake of complete accounting. Otherwise the superintendents have little knowledge of the salaries paid in the division and not too clear an idea of the activities carried on or the actual money spent.

Notwithstanding the fact that the social service department used a section in the hospital, the floor space, light, heat, telephone and lunches were seldom, if ever, charged to the auxiliary, nor were those items allocated to the cost of the social service division. All of this cost was carried by the hospital in the general expenses.

On the basis of the information given, the study showed that the social service department cost on an average from 3 per cent to about 45 per cent of the total out-patient department cost. In fifteen of the out-patient departments, the social service cost less than 11 per cent of the total out-patient department expense. In more than half (53.2 per cent) of the out-patient departments the social service department cost appeared to be about 21 per cent of the out-patient department expenditures.

What Social Service Costs

In one instance the contribution was for the social service alone and was estimated to be about 45 per cent of the total out-patient department expense. The majority of social service costs were covered by funds supplied by the ladies' auxiliaries.

Salaries, which included the reported direct and (indirect) allocated charges for nurses, registrars, doctors, technicians and others, showed a trifle over 50 per cent (51.4 per cent) of the total out-patient department expenses as reported. All the other reported expenses, which included administration, supplies and maintenance for the out-patient department, showed an average of 48.6 per cent of the total out-patient department expense. The study revealed that of this reported cost there was an average of 10.4 per cent expended for the social service work.

Practically all the items given as social service department expense were for salary and supplies. As there was no other way of ascertaining how these expenses should be separated, the cost was equally divided between salary and "all other expenses."

The supervisors of the social service department in the hospitals almost invariably were nurses. In one hospital, however, the supervisor was a volunteer worker and not a nurse. After the study pointed out to this institution the difficulties of the accounting system and the inaccuracy of the out-patient department accounting, this arrangement for the auxiliary supervision was changed. The hospital now controls both the supervision of the social service workers and the funds, although the auxiliary continues to contribute the money as well as the service of its volunteers.

The study showed that in only 4 per cent of the hospitals was the supervision of the social service

and the out-patient department combined. (One of these social service departments was supported by the auxiliary.) Since the information was collected, one institution has separated the administration of its out-patient department and the social service section and has made each director responsible to the superintendent.

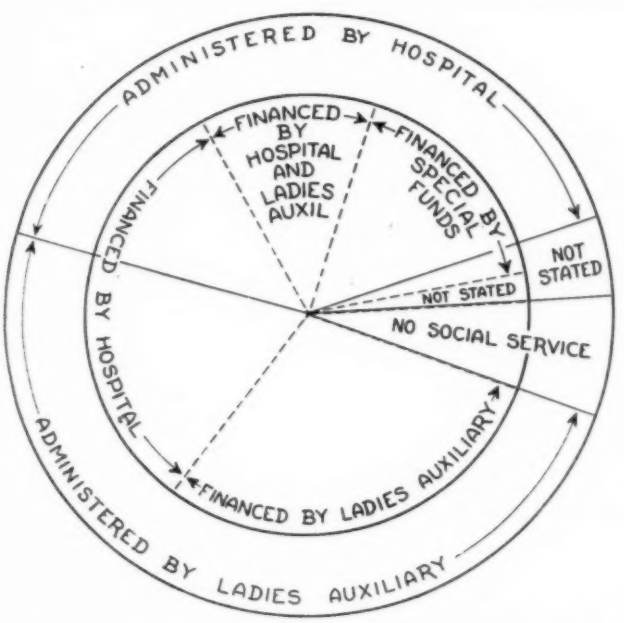
It was found impractical to calculate the relation of the income to the actual cost of the social service work in the out-patient department because of the incompleteness of the data.

The study reached certain conclusions relative to social service work which can be stated as follows:

1. Hospitals fail to take into consideration the floor space occupied and the light, heat, lunches and other maintenance expenses required by the social service department.

2. Outside auxiliaries in a large percentage of cases finance and administer the social service departments. Since these funds do not pass through the accounting divisions of the hospitals, there is an inaccurate knowledge of the cost on the part of both the hospital administration and the auxiliary.

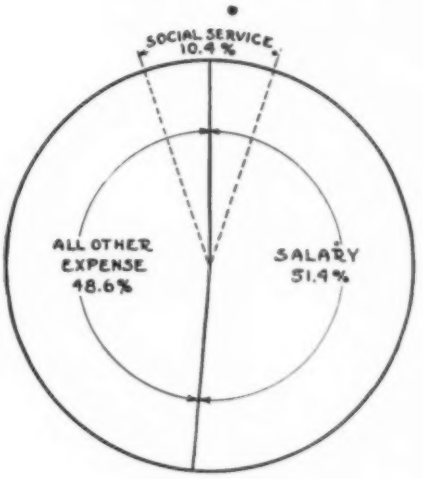
This is the final article in a series of three relating to out-patient accounting in forty-seven



A diagram of social service in forty-seven out-patient departments, showing by whom it was financed and administered.

hospitals taken from a study made by the United Hospital Fund of New York in cooperation with the New York Tuberculosis and Health Association in 1929. The purpose of the study was to provide the hospitals with comparable material to help them arrive at a better understanding of their out-patient department accounting problems. The results of the study revealed the inadequacy of the present methods of ascertaining out-patient department costs. The first two articles dealt with the accuracy of out-patient department costs and the relation of costs to income. The conclusions and recommendations given in the following paragraphs refer to the whole subject of out-patient accounting as well as to the accounting of social service finances.

The average cost for salaries and all other expenses and the average cost for social service for forty-seven out-patient departments are shown in this diagram.



1. Hospitals have no standard accounting system with uniform definitions in operation for their out-patient departments and therefore comparisons of costs are not accurate and are worth little.

2. Many hospitals did not make serious attempts to ascertain complete out-patient department expenses.

3. Few hospitals made accurate allowance for space occupied by the out-patient department or special sections.

4. Few hospitals considered board and lodging as part of the employees' salaries and the item was seldom apportioned to departments.

5. Analysis of the distribution of supplies to departments was infrequent.

6. Practically three-quarters of the hospitals studied had incomplete accounting of the out-patient department income, although the records for income were more complete than those for expense.

7. The total income for the forty-seven out-patient departments met only about three-quarters of their total expenses.

8. There were wide differences in the "cost per visit" due partly to the difference in organization, to the character of the equipment and to the extent of medical teaching and partly to the hospital standards and methods of accounting.

9. Social service offered one of the most accurate items in the hospital accounting, chiefly because the information and the accounting records were frequently kept by the ladies' auxil-

iaries outside the hospitals, and because these accounts were seldom incorporated in either the budget or the accounting statements.

The following recommendations include those specific ones referring to the social service department as well as the more general ones about costs and income:

1. Terms and items used in out-patient and in-patient accounting statistics should be uniform and standardized in order to convey the same definite meaning and to render them comparable.
2. More accurate accounts and records should be kept by apportioning the direct and indirect income and expenses involved in operating the departments.
3. Separate records for the free and part-pay visits to the out-patient department should be kept, including all visits to the special services as well as those made to the general services.
4. The formula for arriving at costs should be standardized.
5. Records should be kept of all the visits made by out-patient department patients to the social service department.
6. Differentiation should be made between the in-patient and the out-patient work.
7. Funds for the social service, including those raised by the auxiliary, should be accounted for through the hospital in order that complete accounting may be made and the accurate cost per out-patient visit or the cost per patient day be ascertained.
8. Allocation of the social service cost should be made by the hours of service rather than by the number of cases or the visits made by the social service worker. The time involved in handling each case, whether it be an in-patient or an out-patient, is the only true measure for correctly prorating the cost of the service rendered. For statistical purposes a record should be kept of the visits and the cases.

General Sites Selected for Nine New Veterans' Hospitals

Sites for several of the nine new veterans' hospitals involved in the Veterans' Bureau construction program will be chosen soon, according to recent statements from the office of the director of the bureau.

Issuance of invitations for bids for the construction work awaits the selection of sites, it was stated, although the general locations in practically all states covered in the program have already been determined.

The program also calls for additions to ten hospitals now existing, and this construction work is already under way. The bill covering the program was approved by the President last December, and makes $15,950,000 available immediately for the new work.

The latest action toward site selection was to choose the general vicinity of Tuscaloosa as a site for the new hospital to be erected in Alabama. This institution is to have 250 beds for general medical and surgical patients and will be equipped with facilities for a regional office. It will cost $1,100,000, it was said.

The general site selected for Indiana is within a radius of fifty miles of Indianapolis. The new hospital there is to have 150 beds for all types of patients, but mainly for general medical and surgical patients, and also is to be equipped with facilities for a regional office. This work is to cost approximately $500,000.

Waco or the vicinity has been selected as the general location for the hospital to be erected in Texas, it was stated, and this hospital will be equipped with 300 beds for neuropsychiatric patients and facilities for a regional office, at a total cost of $1,200,000.

Additions to Existing Hospitals Planned

Bids for an addition of 475 beds to the hospital at Somerset, N. J., have been called for, and this with an addition of 1,000 beds to the existing facilities at Northport, Long Island, will cost $1,900,000, it was disclosed.

A new hospital for West Virginia is to be erected on a site not yet selected, and will contain 125 beds and will require an expenditure of $700,000.

The work of adding facilities for 150 beds and added quarters for attendants at the hospital at North Chicago at a cost of $280,000 was said to be well under way.

Bids for additions to the hospitals at Augusta, Ga., Gulfport, Miss., and Knoxville, Iowa, have been called for. The work at Augusta is for additions to the present facilities of a building, with 138 beds, for acutely psychotic patients, to cost $3[illegible]000, while the additions at Gulfport are for the same purposes, to cost $340,000. The work at Knoxville is for a continued treatment building of 150 beds, and is to cost $270,000.

At San Francisco, a new hospital is to be erected with 200 beds for all types, but mainly for general medical and surgical patients, with facilities for a diagnostic center and a regional office, the total cost of which will be $1,000,000. A new hospital is to be erected also at Albuquerque, N. M., and is to contain 250 beds and a regional office, all of which will cost $1,250,000.

Additions to Camp Custer in Michigan, providing for 300 beds, will cost $450,000, it was shown and the new 75-bed hospital at Salt Lake City will cost $400,000. The 175 beds that will be added to the Army and Navy General Hospital at Hot Springs National Park, Arkansas, will require about $1,050,000, and the addition of 100 beds and expansion of quarters at the hospital at Tucson, Ariz., will cost $280,000.

In New York City, a new hospital is to be built with a capacity of 200 beds for all types of cases, but principally for general medical and surgical patients and with facilities for a regional office, at a cost of $1,000,000, while the new hospital of 400 beds for neuropsychiatric patients, but with a limited supply of beds for general medical and surgical patients, to supplement general bed facilities contemplated at Aspinwall, Pa., will be erected at an approximate cost of $1,700,000.

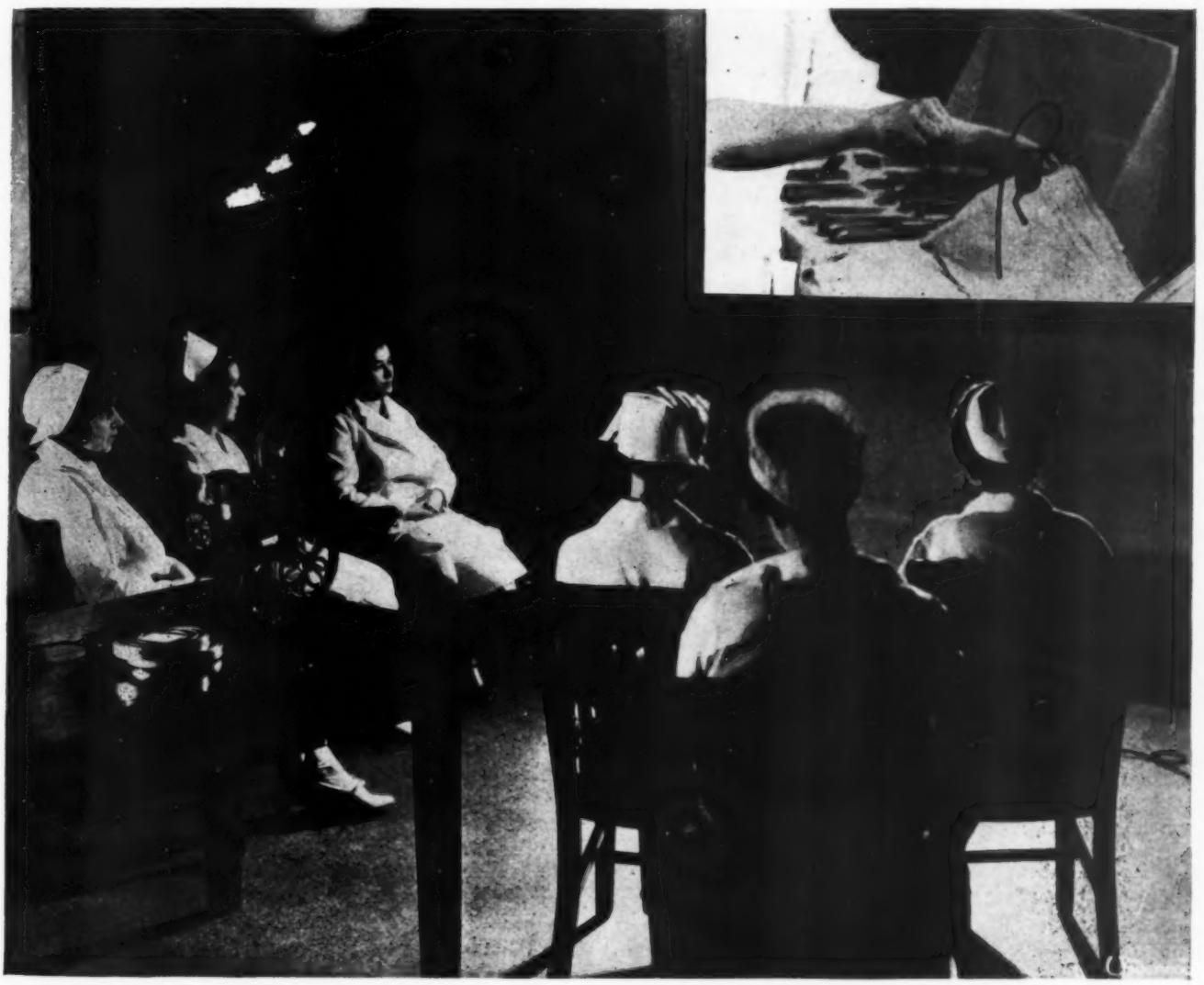
At Bedford, Mass., the present facilities will be increased by a new continued treatment building of 150 beds and additional living quarters for the staff and attendants, the total cost of which will be $360,000. The bill also provides for an appropriation of $1,870,000 for administrative purposes in carrying out the provisions of the act, according to the information given by the bureau.

Motion Pictures as an Aid in the Teaching of Obstetrics

By M. EDWARD DAVIS, M.D., F.A.C.S.
The Chicago Lying-in Hospital and the University of Chicago

MEDICAL progress has made great strides in the past century. During that time some of the greatest boons to mankind have been discovered and popularized. The use of insulin in the treatment of diabetes, the prevention and treatment of diphtheria and scarlet fever, advanced surgery in all its fields and modern obstetrics are some examples of the advances of science.

Medical education has tried to keep pace with medical progress. Principles of teaching have undergone radical changes to further and to facilitate the teaching of an ever changing, living science. Books, lectures and patients still provide the fundamental sources of knowledge. Sometimes, however, these prove insufficient. The student does not always seem to grasp the subject at hand. This is particularly true in obstetrics, where it is difficult to coordinate dogmatic teaching and clinical facts. Models, illustrations and mannikin instruction help considerably. Motion pictures have proved a valuable adjunct. They



Nurse instruction is made interesting and alive by moving pictures.

serve to cement the various facts, ideas and clinical observations into a concrete whole, clarifying the subject and fixing it indelibly in the student's mind.

During the last two decades we have seen obstetrics develop from a stepchild of medicine to one of its strongest sons. One of our foremost American teachers, Dr. Joseph B. De Lee, and the Chicago Lying-in Hospital have been partially responsible for this miraculous development. Today, obstetrics is a highly specialized field, demanding considerable experience on the part of the doctors and nurses who practice it. Pregnancy and labor can no longer be considered entirely physiologic because they often develop pathologic tendencies. We demand a rigid observation of the patient throughout her pregnancy in an attempt to forestall pathologic changes. We insist on an even more rigid technique during labor and the puerperium to ensure an uneventful convalescence. To maintain this high standard we must have competent nurses and doctors well grounded in obstetrics and in the elaborate technique that surrounds the patient in the well equipped maternity.

The Chicago Lying-in Hospital is a teaching institution, the obstetrical division of the University of Chicago. Here we are interested in the teaching of obstetrics to students, nurses and interns. We admit students from seven different medical schools, who spend at least two weeks obtaining the clinical experience demanded of them in their undergraduate work. Nurses who are recruited from about twenty training schools as undergraduates and many graduates spend four months with us in learning obstetrical nursing. Interns, residents and postgraduate doctors who are learning the art and the science of obstetrics complete the number. The teaching of these different groups presents a tremendous problem. Their preliminary education varies. Their technique varies. Their ideas vary. Our problem is to organize our teaching so that this entire group may leave our institution well grounded in the fundamentals of obstetrics and in the technique that has served this institution for years.

Hospital's Films Widely Shown

About two and a half years ago we began to consider the advisability of adding motion pictures to our teaching aids. Since that time we have made great progress. We have produced six 16 mm. and 35 mm. films, from two to eight reels in length, covering the more important subjects in obstetrics. The latest of our films show that we have profited by our earlier experiences, as they represent a distinct improvement over our earlier efforts. These films have been shown in every state in the Union and in many foreign countries, before medical societies, hospital groups, classes of students and nurses. The enthusiastic approval of those who have witnessed them is evidence that motion pictures as a teaching medium in medical education and particularly in obstetrics fill a long felt need. Obstetric teaching can be made interesting, vital, alive, by this new visual aid.

Motion Pictures as an Aid in Teaching

Let me present a few concrete examples of what is being done with motion pictures in spreading the gospel of good obstetrics. A doctor, working through the Government Bureau on Maternal Welfare, is holding meetings for doctors throughout the smaller communities of the Southern states for the purpose of presenting postgraduate instruction in obstetrics. These meetings have been held for nearly two years and have proved tremendously successful. The doctor is not dependent on clinical material or on mannikin instruction. He presents to his audiences at one meeting a motion picture of a normal delivery as conducted at the Chicago Lying-in Hospital. The mechanism of labor and the abnormalities are discussed. The proper conduct of labor is shown, and the proper technique of asepsis brought out. At another time a film on forceps delivery may be shown. The history of the forceps operation is unfolded, showing the development of the instrument and its many modifications. Indications and conditions are discussed, the doctors are cautioned against too early interference and against interference without proper indications, and the dangers of the operation are explained. The forceps delivery is shown to the best advantage; the steps of the operation are analyzed. The use of the forceps in occipito-posterior positions is then treated in the same analytical manner. All this and more can be presented to any medical group at any time. A lively discussion usually follows. The doctors have carried away food for thought, something concrete, something useful. Better obstetrics must result.

Hospital superintendents are becoming more and more interested in improved teaching methods in their training schools. The teaching of nurses has always been an important problem. How best to equip the nurse with all the essentials necessary for a well rounded education in the brief period devoted to her training must be decided by every training school head. Each department of the hospital has special problems and a special technique, and obstetrics, above all,

While the nurse goes through the proper steps in sterilization, a 16 mm. motion picture camera records the technique.

demands considerable time in the nursing curriculum. Every aid possible should be incorporated in the teaching of obstetrics to make it interesting and profitable to the nurse. The motion picture should form an integral part of nursing instruction. Each school of nursing could have a library of films covering the various nursing procedures. The technique may be a specialized one in use at the particular institution or an accepted one in use at one of the outstanding schools. By means of a standardized technique well worked out and filmed, the institution could procure conformity and continuity of its surgical and nursing services regardless of the frequent change in personnel.

In the field of obstetrics prenatal care is of paramount importance. Much of this field is left to the nurse. She can be instructed by means of motion pictures on the details of the routine prenatal visit, the general examination, the blood pressure reading, the urine examination, the weight chart of the patient and the many details of prenatal care. The important signs and symptoms that bode trouble for the patient can be pointed out to her. How easy it is to incorporate living examples of the toxemias, of eclampsia, of placenta praevia or of the other serious disorders of pregnancy for which we ask her to be constantly on her guard. We have already produced a film on the toxemias of pregnancy, incorporating some of these prenatal problems.

At the Chicago Lying-in Hospital we have worked out an elaborate technique on isolation. We practice and teach that a maternity should be housed in its own building and that all infected and suspicious cases should be isolated in a separate building. The nurse could be taught these general principles by motion pictures. These could show the modes of transmitting infections from patient to patient, from doctor to patient or from nurse to patient. The proper sterilization of dressings, linen, bedpans and everything that comes in touch with mother or baby can be demonstrated. The care of the patient in labor, during and after delivery can become events in a completed story. The origin, the transmission and the course of infection become connected chapters, with the prevention of infection at every avenue of entrance the keynote of the story.

Many technical details can be made simple by visual instruction. The preparation of dressings, their proper sterilization, the sterilization of instruments, all can be illustrated so that the nurse will grasp the principles involved. Motion pictures have an advantage in that they can be shown as many times as is necessary to emphasize the point in question. With certain types of 16 mm. projectors the films can be stopped whenever desired during a lecture and the details can be pointed out, or the film can be reversed and run back to emphasize some special point.

Several years ago I was asked to present one of our first motion pictures to one of our largest nursing schools. I presented the subject of asphyxia neonatorum because I thought that this would be of most interest to nurses as the resuscitation of the newborn baby often falls to her lot. The baby is most often asphyxiated following a difficult delivery when the accoucheur is busy looking after the mother. During the presentation of this picture I pointed out the important principles and cautioned the nurses about the dangers of some of the methods. At the regular examination about two months later a question on asphyxia of the newborn was asked in addition to four or five other questions. The answers to the asphyxia question were all excellent; the others, average. This example brings out the value of motion pictures. It is difficult to teach nurses. They work hard, at irregular hours; their teaching staffs are not always the best or the most interested; they are tired and sleepy. To be a successful teacher one should employ all the teaching aids available to make a difficult subject as interesting as possible.

How Nurse's Attitude Is Improved

Did you ever see the confusion that exists in the nurse's mind when she witnesses her first delivery? She does not know which way to turn, what to do, what not to do. She is in everyone's way and is of help to no one, and yet everyone expects her to be of service. At the crucial moment she may even faint and become the center of interest in the delivery room, to her own chagrin and to everyone's disgust.

How different this situation can be made if the nurse witnesses a delivery on the screen before she goes on duty in the birth rooms. She is calm and composed, and the technique employed in the delivery room can be pointed out to her slowly and deliberately. The proper way to drape the patient, to manage the instrument table, to present the instruments in their proper order and to guard against any break in the strict asepsis, all can be emphasized one by one. She is in a receptive mood; she grasps most of the important items. Then the delivery occupies her attention. Here she can be shown what her job is. Then she can see the doctor and his job. She is taught the proper care of the cord and the immediate care of the baby. Lastly, the third stage unfolds itself, augmented perhaps with a little instruction on the function of the placenta.

When she witnesses her first delivery in the birth rooms she notices the little things that were demonstrated to her in pictures. The appearance of the baby is no longer the climax of a weird story and the nursing technique surrounding its appearance is all important. She grasps orders more quickly; she responds to queries promptly; she is alive to the situation, active, useful, learning.

How the Newborn Benefit

The management of a newborn infant assumes an important place in any nursing technique. There are a host of minute details that must be carried out to secure successful results. The care of the eyes, the giving of the daily bath, the care of the umbilical stump, the handling of the baby during all these manipulations, the baby at breast, bottle feeding and the details of artificial feeding—all these and many more problems can be easily demonstrated to the new class of nurses by means of motion pictures. Each detail can be analyzed, explained and commented upon. The demonstration that follows may be made much more instructive than it is at the present time. The problem of infant care always involves the problem of keeping infections out of the nurseries. The sources of infection and the avenues of infection can be illustrated in these pictures. Perhaps pictures of infants with impetigo and pemphigus may impress indelibly upon the minds of the student nurses the importance of the many details insisted upon in infant care.

Assuming that the hospital superintendent or the superintendent of nurses decides to make use of motion pictures in the training of nurses, the question arises as to how or where to obtain them. Anyone with limited means at his disposal can make the pictures after a little practice. Two or three 500-watt lights in addition to the usual operating room lighting will give sufficient illumination for taking the small 16 mm. pictures. Many excellent cameras that are not prohibitive in price are on the market. There is also now available a combined operating light unit that holds a 16 mm. camera in convenient photographing position. Provision is made so that everything is done by remote control out of the way

of the surgeon and nurses. With a certain amount of practice, good pictures can be taken by any surgeon or intern. The common obstetric procedures can be filmed, and these will present the technique used in the particular hospital.

New Films Denote Progress

Undoubtedly the large institutions will take the lead in this new field of endeavor. They have at their disposal sufficient means and what is more important plenty of men interested in progress. New ideas, new methods of technique, new procedures could be filmed. These films will, no doubt, have wide distribution, thereby disseminating experiences, differences of thought and new principles of practice. All this constitutes progress in medicine. The films could also be made available to hospitals, to medical societies and to medical schools. The Chicago Lying-in Hospital has taken the initiative in this new field of education and has made considerable progress in it. In the words of Doctor De Lee, "The making of these obstetrical motion pictures is probably the greatest step yet taken by the Chicago Lying-in Hospital for the advancement of obstetrics and obstetric teaching."

When motion pictures were first shown at one of the medical meetings, a prominent professor of obstetrics made the criticism that the pictures were excellent, but they represented only one school of teaching. That fact, so aptly expressed, should spur other obstetric teachers to set down their ideas and their principles in motion pictures. The distribution and the exchange of these pictures will create an exchange of ideas so necessary in present day medicine. The American College of Surgeons has sponsored a collection of medical films made by various authors and covering the various specialities. Many surgeons in private practice and medical supply houses are making pictures available for general medical distribution. So far these films have been limited to medical subjects for doctors. The College of Surgeons has always been interested in hospital administration and nurses' training. Films on nursing technique may indeed be a valuable addition to the work sponsored by the motion picture committee of the college. Hospital superintendents and nursing schools may then be able to purchase such pictures for their libraries. I am glad to note that the largest manufacturers of motion picture equipment are alive to the possibilities in these fields and extend every possible cooperation to those interested in using motion pictures along these lines.

Lastly, what is the possibility of talking motion pictures in medical education? For entertainment this form of picture is rapidly displacing the silent one. Several excellent medical talking pictures have been made in the past two years. We have depicted the low cervical cesarean section, including its anatomic study, its history and a discussion of the merits of the operation, in six reels. It is almost uncanny to see the baby delivered and to hear it cry lustily, and to hear the operator talk to an invisible audience of thousands. Portable "talkie" outfits are now available, so that a synchronized lecture can be run with any silent picture, thereby greatly increasing its effectiveness.

Will these talking pictures add anything to the teaching of medicine that cannot be given by silent pictures? Will the personality of the surgeon or teacher, which can be brought before the audiences in talking pictures, add to the educational merit of these pictures? Does the synchronization of the action and voice impress a fact or a problem more keenly on the student's mind? These and many other questions will have to be answered before we shall know what educational possibilities the future holds.

Improving Nurse Education Through Sanatorium Experience

That the sanatorium and other special hospitals can give to the nurse training that cannot be had in any general hospital, but that is necessary to round out her nursing education, is emphasized in an article by Dr. A. D. Lapp, medical superintendent, Tranquille Sanatorium, Tranquille, B. C., in the *Canadian Nurse*.

"The sanatorium has other functions besides the isolation and treatment of tuberculosis," Doctor Lapp points out. "One of its greatest responsibilities is educational. Dissemination of knowledge regarding tuberculosis is one of the greatest factors in controlling the disease.

"The sanatorium is the only place where teaching about tuberculosis can be carried out satisfactorily. By living among tuberculous patients, the nurse gets an entirely different picture from that conveyed by textbooks.

"In general hospitals that have tuberculosis wards there is bound to be a confusion of ideas to a nurse who observes several ways of treating the same disease. It would be a great help to these hospitals if they could have nurses who had had a course at the sanatorium to staff their tuberculosis wards. The stay of the nurses at the sanatorium would remove the fear of tuberculosis from their minds. I have never known a sanatorium employee to develop tuberculosis as a result of his being there.

"Another benefit to the nurses from affiliation with the sanatorium is the bringing of nurses from various schools into contact with each other. This should have a broadening effect on their nursing experience.

"It would also raise the standard of the sanatorium, for a teaching institution must have higher standards."

Doctor Lapp, however, does not advocate a full training course at the sanatorium—only a two or three months' course as part of the general undergraduate training.

Editorials

The Hospital as a Political Asset

THE Juggernaut of partisan politics has crushed the morale and efficiency of scores of otherwise splendid hospitals.

Stately buildings, fine equipment, a well trained and highly ethical personnel, all are powerless to carry on when the greed of men and political machines take a hand in administering an institution for the care of the sick. When the demand for jobs is made by ignorant men of little or no vision, the welfare of the sick shrinks into insignificance until the political appetite is satisfied. While this is going on the morale of well trained, honest and ethical workers drops with plummetlike speed when they are forced to labor side by side with such political misfits.

How blind is a political machine which does not sense the immense return in public appreciation and confidence that an efficient, nonpolitical and scientifically trained personnel can generate if it is unmolested by the demands of the petty grafting job hunter. Even when one refrains from pressing the claims of the sick man and woman for service of the highest type (and such an effort is usually unavailing in the presence of ignorance and greed), the well conducted nonpolitical hospital will be worth far more as a political asset than one in which scandal, distrust, extravagance and inefficiency are rife.

Unless the politician recognizes the wisdom of sparing the hospital from returning a share of political patronage, an enlightened public must and will step in and elect officials who will. In such a campaign the press can be of much service. And it may be said to the great credit of the journalistic fraternity that it is usually to be found on the side of the sick and needy.

Does This Strike Home?

THE superintendent who sits in his office and does not continually make trips to the various parts of his building, who feels that he has chosen competent department heads and that his responsibility ends there, is making a mistake. One of the first duties of the superintendent should be to supervise the work of the dietitian, the nurse supervisors, the pathologist and every other person who is cooperating to make the hospital a livable place.

When maids are slovenly, when orderlies are impudent, when nurses talk back to private patients and treat rudely ward patients, when the laboratory technicians do not cooperate, when the food is cold or unattractively served, when nurses' signals go unanswered or any one of a thousand other annoyances occurs, it is the superintendent's fault and no one else can be blamed. If he would take the trouble to find out what is going on in his own institution and correct matters before the patient is subjected to bad treatment, ninety per cent of the complaints that come in would be eliminated. Perhaps more serious are the complaints that do not come to the superintendent but go to the general public.

Sitting in the office is a pleasant and possibly profitable pastime but it is not administration nor is it particularly good supervision. Choosing good department heads is half the battle but the other half is to see that the organization actually functions efficiently, pleasantly and to the best interests of all the patients whether they be private or public charges.

The Grading Committee Draws Some Conclusions

IN THE gigantic task undertaken by the Committee on the Grading of Nursing Schools the sympathy, interest and cooperation of hospital trustees and others responsible for such schools had in some way to be won. That the methods adopted by the committee, sometimes somewhat dramatic, at other times not a little misleading, were practically successful is attested by the announcement that 1,458 schools voluntarily cooperated in the study.

And now is made public the first concentrate, the initial attempt to separate the chaff of biased or falsely prideful belief of local individuals relative to the excellencies of their schools from the cold and statistically sound facts as gained by a study of the questionnaires returned. The interest arousing, platform declaiming days of the committee are in the past. The hospital and educational fields now look with kindly, critical, expectant and yet not extravagantly hopeful eyes on the first concrete evidence of its labors. Some interesting facts are presented in this report which can and will in all certainty produce helpful changes in the organization and the policy of schools for nurses. Whether the conclusions, based on the study of questionnaires more or less accurately executed by a large number of student nurses, are altogether well founded does not in any way detract from the value of the informa-

tion gained regarding the trends in size and educational policies of the majority of schools in the field and the age and preparation of their students.

The method employed to indicate the relative standing of schools is interesting. The educational responsibility of the hospital for its training school is repeatedly and rightfully stressed. It is not, however, strictly accurate to intimate that hospitals unduly persuade young women to enter the profession of nursing. To announce a course of instruction in nursing is a far cry from unreasonable or excessive personal solicitation of the individual. The wisdom of securing more graduate nurses is again strongly suggested in this report. Wise, no doubt; practical or possible, not always. A greater maturity in age of students, the possession of a high school diploma, proper protection of the health of young women by granting and enforcing sufficient time for eating, playing and sleeping are principles that THE MODERN HOSPITAL heartily applauds.

It is questionable whether sound educational principles can prevail in schools in which the whole student body ranges in number from two to thirty-seven, as do one-fourth of those in the field. Will the moral force of this study tend to create a change in policy in such institutions? It is hoped that it will.

Occupancy *Versus* Cost

THE public does not generally realize that the beds in a hospital are rarely full. If those who invest, without thought of financial return, the two hundred or two hundred fifty million dollars a year that go to the enlargement or improvement of hospitals in the United States appreciated that in many of these hospitals one-third of the beds lie empty on the average day of the year, there might be hue and cry and a challenge to the hospital world to show why an investment of from $4,000 to $10,000 per bed should lie idle.

In the recent hospital survey of Philadelphia, it was found that average occupancy of the beds in that city was only 67 per cent. A recent report of the Institute of Medicine of Chicago gave no general percentage for hospitals as a whole in this city, but stated that some hospitals showed considerably lower rates than the average in Philadelphia. The report made by the Duke Endowment of sixty hospitals in the Carolinas showed in 1928 an average occupancy rate of 53.9 per cent.

Aside from the waste of capital investment involved in empty beds, current per capita costs mount when the hospital organization must be maintained with only a low occupancy. It seems that hospital superintendents often fail to appreciate that filling a larger proportion of hospital beds even at somewhat lower rates would mean a larger net financial return than a smaller number of patients averaging higher rates. This relation between hospital occupancy and cost has been brought out in a recently published study by the New Jersey State Department of Institutions and Agencies. Forty-two hospitals in New Jersey reported their percentage of occupancy for each month of 1929 together with their daily average per capita cost for the month. The average percentage of occupancy was 68 per cent and the average per capita cost $5.07. But the occupancy rate went down as low as 65 per cent in September and rose as high as 71 per cent in February and March. The per capita cost ran, generally speaking, in an opposite way to the occupancy rate. The cost was below the average in the first quarter of the year when the occupancy rate was at its highest, falling as low as $4.63 in January; and it was above the average in months of low occupancy, being $5.36 in September when the occupancy rate was at its minimum. The per capita cost was at top notch, $5.53, in December when the occupancy rate was as low as 66 per cent.

Every administrator is aware that both per capita costs and occupancy are determined by numerous factors and that a low state in the one is by no means the only reason for a high state in the other. But certainly the relationship between rate of occupancy and level of cost is a major administrative point to which much more attention might well be devoted.

Feed Your Nurses

IT CANNOT be denied that the work of the nursing force is second only to that done by the medical staff in the hospital. This includes special duty nurses, supervisors and the student body. The nurse has direct contact with the patient over a period of days. She works long hours and does strenuous tasks. She seldom has time to loaf on the job. She must have at her command every ounce of energy that she can call upon and the nurse who doesn't soon falls out of the ranks or becomes a patient herself.

The cost of the education, room and board of the student nurses is included in the patient's bill just as surely as if it were itemized. The food of the special duty nurses is actually itemized, sometimes at a substantial figure. If these students and these specials do not get the best food

obtainable, nutritious and attractively served so that they can eat the meals, then the hospital is cheating the patient who is paying.

To attempt to make up losses by skimping on the nurses' food is both dishonest and short-sighted. How can any woman work twelve hours a day on short rations? How can she serve the hospital to her fullest capacity when the meals served to her are so poor that she runs over to the corner drug store or restaurant on her hours off to stock up on ice cream, sandwiches and carbonated drinks? One nurse recently stated that she had not eaten dinner at the hospital for more than a month but had taken her meals out. She was a senior in training school and her funds were limited but she could not eat the food served in the nurses' home. Complaints did no good and her only recourse was to skip the meals and spend her own money.

When this nurse graduates and goes into private duty nursing just what is she going to say about the hospital that did not feed her adequately? What impression is this going to make on those who are friends of the hospital?

It is true that very often the nurses, especially the special duty nurses, make exaggerated statements about hospital conditions and are given to making unnecessary complaints, but when six specials and five students in one day tell you that they are unable to eat the food presented to them and that this is the usual thing you begin to wonder whether perhaps something shouldn't be done about it.

Dangerous Haste

THE least important part of the surgeon's skill lies in the actual incision, excision and suture of tissues. Less dramatic but of greater importance to the patient are the preoperative study, the time consuming laboratory and clinical investigations of the patient's disease, the decision as to the probability of the patient's ability to withstand surgical interference.

If this is true, why the indecent haste so often observed in bringing the patient to the operating table? A visit to a surgeon's office, a series of questions, an all too casual physical examination and then comes the pronouncement of the decision that the operation will take place on the morrow. No matter that the pathologic condition predicted was found at operation. What of all the precise examinations that have been evolved to reveal distortions of heart, liver or renal functions? Surely, no mere office examination can routinely discover such defects. The performance of an operation on a patient on the day of his admission to the hospital should be forbidden, except in cases of emergency. No surgeon can properly protect the lives of his patients unless he gives them an opportunity to enjoy all of the life-saving diagnostic studies that the hospital can contribute.

Hospital and Hotel Rooms

THE private room is often the financial lifeboat of the hospital. Moreover, the beds in private pavilions and on private floors must be kept occupied a large percentage of the time or operating deficits will mount alarmingly. While many factors affect the income from private patients, a superlative service to the hospital's paying clientele is perhaps the most efficacious remedy that can be suggested for the ill of low occupancy.

Too frequently private rooms are uninviting and because of improper location are noisy, ill ventilated, dark or continually pervaded with kitchen odors. Dismal, antiquated furniture, often in disrepair, certainly repels rather than courts favorable comment by the patient and his visitors. Monotonous color schemes, windows innocent of the enlivening touch of chintzes, walls dull or even unclean in appearance, wardrobes and dressers either shoddy in construction or ancient in vintage, are but a few of the items that observing patrons too frequently remark as differentiating the hospital room from the hotel room.

The layman rightfully questions the necessity for the ascetic barrenness of such accommodations. Moreover, poor administrative practices, such as insufficient cleaning and ventilating of rooms following occupation and such gross errors as the failure to provide fresh linen until the patient arrives, are inclined to impress the stranger most unfavorably. A low occupancy rate of private rooms may surely in some instances be traced either to defective and careless housekeeping methods or to a physical equipment that is far from appealing.

When such practices exist, it would be an act of financial wisdom to refurbish and refurnish these rooms and, if need be, to pay on the partial payment plan for the cheerful chintzes and the modern and inviting furniture that ought to prove attractive to prospective institutional clients. Private rooms, while not necessarily lavish in appointments, should at least compare in comfort and tasteful beauty with similar accommodations in the average good hotel.

Practical Administrative Problems:
The Advantages and Dangers of Anesthetics*

By JOSEPH C. DOANE, M.D.
Medical Director, Jewish Hospital, Philadelphia

IT MUST be conceded at the outset that the state of anesthesia is one of danger. Any agent that can affect so profoundly the functioning of bodily tissues as an anesthetic does is one to be respected. Yet, there is no general agreement among physicians and other scientists as to the physiological or chemical cause of unconsciousness as a result of the ingestion of ether, chloroform, nitrous oxide, ethyl chloride or ethylene.

Whether narcosis results from the effect of these drugs upon the body lipoids or whether some other action takes place to produce this unconsciousness is not germane to this discussion. It is sufficient to remark that the work of the hospital could not be carried on without an efficient anesthetic department and that the patients entrusted to its care could not be properly safeguarded unless pure anesthetic drugs were available and administered in as safe a method as possible.

It is a significant fact that deaths have occurred from, or during, the use of all anesthetics. At the same time some of the agents employed are doubtless safer than others. The following figures illustrate this variance in mortality rate:

Ether—1 death in 5,623 cases.
Chloroform—1 death in 2,048 cases.
Chloroform with oxygen—I death in 4,009 cases.
Nitrous oxide—no deaths in 8,585 cases.
Ethyl chloride—1 death in 11,219 cases.

Many anesthetics are inflammable and explosive. This physical character must certainly be taken into account in considering the dangers incident to their use. Chloroform is decomposed by a flame and forms an irritating chlorine compound. It is practically nonexplosive.

Irrespective of the explosive and inflammable properties of an anesthetic, every patient is exposed, following its administration, to certain dangers incident to tissue change, pulmonary irritation or infection. Children and pregnant women, for example, are particularly likely to develop a postanesthetic acidosis. The adipose and the alcoholic are particularly difficult to anesthetize and they are equally likely to develop postanesthetic difficulties. Failure of respiration, collapse, postoperative pneumonia and necrosis of tissues are all potential dangers. When to these dangers are added the hazards of the explosion of cylinders of nitrous oxide[1] and the catastrophes incident to the use of ethylene, there can be little question as to the urgent necessity for exercising precaution in the selection of anesthetics.

Methods of administration vary greatly, and newer and more refined techniques are being developed constantly. Ether can be successfully administered by the intratracheal route and by rectum, propelled by a stream of air. One ounce per twenty pounds of body weight is usually the dose administered in oil by rectum. Ether has been given intravenously by the drop method in from 5 to 7½ per cent solution.

Ethylene First Described in 1779

Ethylene is an olefiant gas which was first described by Ingenhauss in 1779. Its physiologic properties were further studied and described by Nunnely of Leeds in 1849. This gas, however, was not found to produce narcosis with satisfactory results until 1923 when Luckhardt and Carter reported the first series of operations under ethylene. Ethylene is lighter than air in contradistinction to ether which sinks to the floor of the operating room. Ethylene in the presence of oxygen represents an exceedingly explosive mixture. This is particularly true since this anesthetic must be used in 90 per cent concentration with 10 per cent oxygen. After the anesthetic has been well established, it may be efficiently used in 80 per cent concentration.

Ethylene, it appears, has come to rival not only nitrous oxide but also all of the rest of the anesthetics in its efficiency and in its freedom from postoperative complications. It possesses the advantage of inducing deep anesthesia with no signs

*A review of the report of the American Medical Association's committee on anesthesia accidents, Jour. Am. Med. Assn., vol. 94, p. 1491, May 10, 1930.

[1] Due to excessive pressure or explosion of oil used in lubrication of valve.

of asphyxia and practically no dyspnea. It induces complete muscular relaxation and, with the exception of its explosive properties, it is generally conceded to be much safer in other ways than ether. In addition, analgesia is produced earlier. Indeed, before unconsciousness has actually taken place, minor operations may be performed without pain to the patient. Moreover, the patient's recovery from unconsciousness is more rapid and the suffering from uncomfortable postanesthesia symptoms is much less. As has been indicated, the chief disadvantage of ethylene is that it is inflammable and explosive when mixed with oxygen. In addition, its odor is somewhat disagreeable to many persons. It is superior to ether, however, in that it is nonirritating to respiratory passages and, hence, causes no increase in mucus, thus lessening the danger of inhalation pneumonia.

The acid test as to the advisability of using any anesthetic must be expressed in terms of the preponderance of advantages over dangers. Chloroform is particularly useful where the transportation of drugs is difficult—for example, in military practice—but it possesses certain inherent dangers that keep many from using it. Ethylene is often not employed because of its reputed explosive dangers. Nevertheless, every drug now acceptable to the medical profession has passed through a period of development such as that which sodium amytal is undergoing at the present time. The time is doubtless not far distant when, because of refinement in technique and because of greater understanding as to its potentialities and dangers, an intravenous injection of a gram or less of this chemical will safely produce narcosis. Spinal anesthesia with procaine, stovaine and neocaine formerly was actually much more hazardous than at the present time.

Safeguarding the Use of Ether

Hospital executives and surgeons have, however, feared and rightfully so, the dramatic and devastating effect of the explosion of any anesthetic. Terrible accidents have occurred. On the other hand, the accidental incision of a large artery at times produces danger, or actual death to the patient. Nitrous oxide in the presence of ether and oxygen has produced fatal explosive accidents. A flare of ether gas in the operating room is both disconcerting and dangerous. Many accidents with ether, however, could have been prevented if cautery, electric switches and motors had been properly safeguarded and if provisions had been efficiently made for preventing the generation of static.

Any gas under excessive pressure may produce an explosion. In the report of the committee on anesthesia accidents, drafted by Yandell Henderson, New Haven, Conn., an extensive discussion of the whole question of anesthetic hazards is to be found. Doctor Henderson calls attention to the fact that if oil, for example, is used in lubricating the needle valves of a nitrous oxide oxygen container, upon opening the valve a spark may be produced that will result in a devastating explosion. It has been stated, moreover, that the intermixture of gases through the use of a faulty anesthetic machine produces a most dangerous situation. Yet, even the most modern and well constructed gas apparatus may create definite explosive hazards.

Anesthetic Versus *Postoperative Hazards*

In comparing the dangers incident to the use of the anesthetics ordinarily employed, it is interesting to note that deaths as a result of the explosion of ethylene do not exceed one in every 100,000 administrations of this anesthetic, while those from postoperative pneumonia range from 3 to 5 per 1,000 cases. B. C. Sword[1] is the authority for the statement that the hazard from anesthetic explosion is less than that resulting from persistent postoperative hiccup. Nevertheless anesthetic explosions are usually given front page newspaper space while deaths from pneumonia are rarely if ever mentioned in medical literature. Hence public opinion is inclined to exalt the importance of the former and overlook the destructive effect of the latter. It would be, indeed, a wise step, as has been remarked by Doctor Henderson, to endeavor more actively to prevent postoperative pneumonia by refining the technique of the administration of the anesthetic as well as perfecting the machine used therefor. At the same time no effort to prevent explosion should be spared.

In the report to which reference has been made, the results of a questionnaire that was drawn up by Dr. Louis Levy of Cincinnati were set down. The questionnaire was sent to 478 hospitals. Replies were received from 288, of which 129 employed ethylene as an anesthetic; 158 had never used it and 12 had changed to some other drug after once employing this agent. Some did not use ethylene because they feared an explosion. Others had had unpleasant experiences and had, therefore, given up its use. In most of these incidents, accidents had occurred because cautery had been brought too near the patient's head. In one instance, an unexplainable explosion of a tank of nitrous oxide took place. One may gain an idea of the rarity with which accidents occur

[1] Journal of the American Medical Association, 89:1,118.

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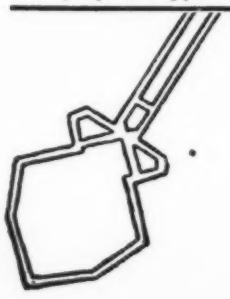

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when it is stated that not a single explosion took place during a series of 330,000 reported anesthesias.

The results of a questionnaire sent out by Dr. Hugh Cabot, Ann Arbor, Mich., were cited in this report. In a group of 64 hospitals, 25 expressed a choice for ethylene; 24 preferred a nitrous oxide-oxygen-ether anesthesia and 18, ether initiated by nitrous oxide. In 23 institutions, ethylene was not used at all. In this group, 146,000 ethylene anesthesias were reported with 4 accidents of a more or less dangerous character. Nineteen of these hospitals reported ether flares. In 6, cautery was the source of ignition; in 2, the fluoroscope; in 12, a spark from a motor and in 4 an exposed headlight wire. In 8 cases, the cause was not stated. In most of these cases, ether was being administered by the open method but in 4 cases, the explosions occurred in connection with the use of an anesthetic apparatus administering nitrous oxide-oxygen and ether.

The results of a third questionnaire were also reported in this article by W. J. M. Scott, a member of the anesthetic committee. Replies were received from 58 prominent surgeons who reported on 163,000 ethylene anesthesias. In this group, 18 explosions occurred of which 5 were serious but only 1 was fatal. The remainder were not serious in their effects. These surgeons reported that they had observed 19 explosions under ether, of which 5 produced serious injuries, including two fatalities. It is probable that most of these explosions were initiated by a cautery, a spark from a suction apparatus or from defective electrical connections of the headlight of the operator being used near the head of the patient.

How Accidents Occur

The following paragraphs are quoted from the body of the report:

"None of the anesthetics, except acetylene, can explode without some source of oxygen. But any gas or vapor consisting chiefly of carbon and hydrogen, if ignited in the presence of air or oxygen or nitrous oxide, may undergo the rapid form of combustion, evolution of heat and expansive force constituting explosion. For every carbonaceous gas there is, however, a minimum concentration below which the wave of flame is not transmitted through the air or other atmosphere with which it may be mixed. This minimum is nearly the same in air or oxygen. For ether it is a little less than 2 per cent. For ethylene it is about 3 per cent. When less than these amounts of ethylene or ether are mixed with air, nitrous oxide or oxygen itself, the application of an electric spark or other source of heat induces combustion only within the area heated; that is, the combustion does not spread. When somewhat more than these minimum amounts of ether or ethylene or similar gas are mixed with air, oxygen or nitrous oxide and are ignited at one point, the combustion may spread as a wave of flame which may be called a flare. It lasts for a moment only and beyond singeing the hair or eyebrows of anyone in its path or setting fire to a gown or an open can of ether, it seldom does much harm, although it is rather startling.

"When higher concentrations of ethylene or ether or similar gas are mixed with air or oxygen, the transmission of the wave of flame is correspondingly more rapid and the production of heat is greater. When the percentage of ethylene mixed with oxygen is about 25, with a considerable range above and below this percentage, the explosions are of detonating force. But with still higher concentrations of ethylene in oxygen the force of the explosion again decreases. At an upper limit of 80 per cent of ethylene mixed with 20 per cent of oxygen, explosibility practically ceases. In such a mixture the oxygen is insufficient to carry on the combustion or permit the transmission of the explosion wave or even a flare. The difference between mixtures of a combustible gas in air and mixtures in oxygen is that the upper limit, above which flame is not transmitted and explosion cannot occur, is much lower in air than in oxygen, and the range of mixtures that may explode is diminished.

"Ethylene has nearly the same molecular weight and specific gravity as the average for the gases composing air. It is, therefore, highly diffusible. When liberated into the air of the operating room it spreads so quickly that the concentration at even a short distance falls below the danger point. Thus, Cheney and Folkman[1] find that a few feet from the anesthetic apparatus and operating table, only minute amounts can be detected. Even in the neighborhood of the anesthetic mask, ignitible concentrations are not maintained, except within a distance of less than a foot in the direct line of the exhalation valve of the mask during an ethylene anesthesia. Flares of ethylene, therefore, rarely occur in the operating room. For the entire operating room to be filled with a sufficient concentration of ethylene to permit a forcible explosion or even a general flare appears almost impossible, so long as the amounts liberated are only such as come from the exhalation valve during an anesthesia. Under ethylene the use of the cautery near the head or in the chest is, however, very dangerous. The

[1] Cheney, M. B., and Folkman, M. L., Anesthesia and Analgesia, 9:11, February, 1930.

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use of the cautery in the abdomen is safe only when a screen or curtain is placed between it and the patient's face. But roentgenographic, diathermy and other electrical apparatus always involve serious risk of initiating an explosion when used in the presence of a volatile combustible anesthetic.

How Ether and Ethylene Are Used

"The reason that, in the operating room, explosions of ethylene, when they do occur, are generally much more violent than those of ether is that 80 per cent or more of ethylene is required for full surgical anesthesia of the same depth of unconsciousness and relaxation as are obtained with only 6 or 7 per cent of ether vapor. The concentration of ethylene required for full surgical anesthesia is even above the point of combustion. Explosions of ethylene inside anesthetic apparatus do not usually occur during full anesthesia; in fact, it is scarcely possible for one to occur. It is at the end of anesthesia, while the gas is being washed out with oxygen, that mixtures within the highly explosive limits are produced. During this period, the mixture in the anesthetic apparatus passes from the upper limit down to the lower through the whole explosive range.

"In contrast to full anesthesias, the much lower concentrations sometimes used for obstetric analgesia are highly explosive. The use of ethylene during labor is on this account probably much more hazardous than for major surgical operations.

Preventing Ethylene Explosions

"There appears to be no possibility of counteracting the explosiveness of the mixture in the lungs at the end of an ethylene anesthesia by using air or nitrogen or other noncombustible gas for the 'washing out,' although the process may be hastened by means of carbon dioxide. As Jones[1], with Kennedy and Coward, has pointed out, the amount of the noncombustible gas would have to be so large that the patient would be asphyxiated before a nonexplosive mixture could be produced. The only possibility of eliminating the hazard of explosion is to prevent the explosive mixture from being ignited by a spark or other source of heat sufficient to initiate combustion. It is a significant fact that a weak spark may fail to ignite a gas mixture that a stronger spark will explode.

"The risk of highly explosive ether mixtures in the operating room is not very great, as the concentration required for full anesthesia is only 6 or 7 per cent. But experience shows that with open ether the risk of flares and fires is considerable. Ether vapor is heavier than air, both as to molecular weight and as to specific gravity. On this account it does not diffuse so readily as does a lighter gas. If a draft in the operating room carries a band or stream of ether vapor of 3 or 4 per cent or higher concentration in air across the room to a flame, a cautery or an electric spark, a flare or wave of flame may pass from the source of heat over to the mask or can from which the ether is being volatilized. This is the commonest occurrence in the field of explosion or fire in the operating room."

Humidification of Air an Advantage

Carelessness seems to be largely the cause of explosive accidents. At the same time, the unwise use of the cautery, defective headlights and unenclosed motors on suction apparatus probably cause relatively more explosions, most of which, however, are less serious than are those produced in the anesthetic apparatus. Fortunately many can be prevented by the exercise of a reasonable degree of care. Doctor Henderson thinks that these explosions in the anesthetic apparatus are due to sparks resulting from the discharge of static electricity developed within the apparatus itself. The causes for the generation of this static are not fully understood and hence are difficult to prevent.

It is suggested in this report that the accumulation of charges of static electricity within the apparatus or on persons coming near to it may be prevented by the humidification of the air in the operating room to more than 50 per cent moisture content and by the electrical grounding of the anesthetic apparatus, the operating table and so far as possible the floor of the operating room. The effect of humidifying the air of the operating room is to render the surfaces of the anesthetic apparatus capable of conducting any electrical charge that may develop. The charges of electricity are thus allowed to leak away before potentials high enough to cause a spark can be built up. It has been found that a humidity of about 54 per cent is capable of bringing this about. One disadvantage of this practice is, of course, the creation of extreme discomfort to surgeons and their assistants during warm weather.

Ventilating systems necessary to maintain a constant operating room temperature are exceedingly expensive. It has been estimated by Doctor

[1] Jones, G. W., Inflammability of Mixed Gases, Technical Paper 450, Department of Commerce, Bureau of Mines, 1929. Jones, G. W., and Kennedy, R. E., Extinction of Ethylene Flames by Carbon Dioxide and Nitrogen, Anesthesia and Analgesia, 9:6 (Feb.) 1930. Coward, H. F., and Jones, G. W., Limits of Inflammability of Gases and Vapors, Bulletin 279, Department of Commerce, Bureau of Mines, 1928.

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Henderson that if eight or ten rooms of moderate size were equipped in this way, it would be necessary to expend approximately $30,000. The presence of a hygrometer in an operating room would, of course, make constantly available information concerning the rising and falling of humidity. The slow escape of steam of a near-by sterilizer has been found useful in bringing this about. Warm blankets which are often stored in a nearby warming closet are rendered more safe from the standpoint of static if they are kept slightly moist.

Attempts have been made to ground anesthetic apparatus by connecting it with a wire to a near-by water pipe. It is questionable whether this is an effectual method of protection. Floors have been grounded by inserting therein metal strips which are in turn grounded so that anyone stepping on them is relieved of any charge that the shuffling of his feet or the friction of his clothing may have accumulated. The wearing of rubber sole shoes, of course, would make this action impossible.

McKesson[1] states that if contact is made between the anesthetist, the patient and the anesthetic apparatus before the anesthetic is begun, the risk of sparking after the ethylene is turned on is largely eliminated.

Herb[2] suggests the grounding of the patient, the operating table, the anesthetic apparatus and all persons who come near the table. Henderson calls attention to the fact that a new danger is added by grounding the patient whereby the possibility of short circuiting any electrical instruments or diathermy apparatus is brought about. Severe burns have been reported from such short circuits.

Eliminating the Electrical Hazard

But none of these precautions seems to solve the problem of preventing static within the anesthetic apparatus. The method by which electrical potentials are thus built up, as has been indicated, is not completely understood. The following notes from Doctor Henderson's report are of interest along this line:

"There is no reason to doubt and every reason to believe, that any anesthetic apparatus containing many rubber parts will from time to time produce explosions in a similar manner. Experimental observations strongly support this view. One of the members of this committee (H. B. Williams) as a basis for a report to the council on physical therapy, has made a number of observations on the electrical charges that may be built up on the rubber tubing and particularly on the rebreathing bag by the friction of the rubber surfaces against each other. It was found that potential differences of 1,000 volts or more may be thus developed. Such voltages are quite enough to initiate an explosion under favorable circumstances, although the sparks would be small and nearly noiseless. It appears likely that such sparks occur frequently in anesthetic apparatus but cause explosions only exceptionally.

Rubber Parts Increase Hazard

"This view of the electrical hazard in anesthetic apparatus is fully substantiated by observations with the electroscope by Herb, McKesson, and Lewis and Boehm,[1] and particularly by a valuable study by Dr. F. D. Johnston, who carried out his investigations at the suggestion of Dr. Hugh Cabot in the department of surgery of the University of Michigan. The paper is as yet unpublished but has been made available to this committee. In this investigation particular attention was devoted to the electrical initiation of explosions of ethylene in anesthetic apparatus. The experimental part which is most significant deals with the electrical charges developed within the rubber rebreathing bag. It was found that, as this bag expands and contracts synchronously with the patient's expiration and inspiration, there is an appreciable amount of friction between the inside of the bag and the metal chamber or tube to which the bag is attached in the particular apparatus that was examined. This friction causes a negative charge to be built up on the inside of the bag, while an equal and opposite positive charge is imparted to the metal piece. This piece is electrically joined to the entire metal framework of the apparatus and cannot therefore keep the charge produced on it, which is distributed to all the interconnected metal parts and in this way is greatly attenuated and virtually lost. The negative charge on the inside of the rubber bag is bound by the nonconducting nature of the material to remain in situ. Doubtless some of this charge is dissipated to the metal part every time the bag is sucked up against it. Apparently, however, this momentary and imperfect contact does not suffice to discharge the bag but, on the contrary, the friction occurring at each contact tends rather to build up higher charges on it. Thus to all intents and purposes a high negative charge is developed on the inner surface of the rebreathing bag while the metallic parts of the apparatus are without appreciable charge.

"This conception was fully substantiated by

[1] McKesson, E. I., Brit. Jour. of Anesthesia, 3:178, April, 1926.
[2] Herb, Isabella C., Jour. Am. Med. Asso., 85:1,788, December 5, 1925.

[1] Lewis, W. B. and Boehm, E. F., Jour. Am. Med. Asso., 84:1, 1417, May 9, 1925.

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observations by means of a gold leaf electroscope indicating decisively the development of frictional electrical charges in the bag. In addition, an electroscope of a different type with a movable needle and calibrated scale was used to measure the potential developed in the rebreathing bag. Readings up to several hundred volts were obtained."

It is suggested by Doctor Henderson that there are two possible lines of attack that present themselves insofar as the prevention of the development and localization of electrical charges inside the apparatus are concerned.

1. Provisions for keeping the gases in the apparatus constantly so moistened that any charge that may be developed will leak away before the point of danger is reached.

2. The elimination of nonconducting rubber in the bags of anesthetic apparatus and its replacement by metal or other conducting material. A small spirometer in place of the rebreathing bag so that the localization of static charges would be impossible has also been suggested.

Change in Apparatus Suggested

An attempt should be made to keep the mixture of gases in the anesthetic apparatus sufficiently moist to prevent the accumulation of electrical charges on the interior surfaces. But even the washing of the tubes with water before the anesthetic is started and the placing of a wet sponge in the rebreathing bag and the bubbling of gas through water are not always effectual. At the end of a prolonged anesthesia, the tubes and bag may be dried out and the bubbling of gas through water is not sufficient to maintain enough moisture on all the interior surfaces of the apparatus to ensure electrical conductivity. Doctor Henderson believes that the only solution of the problem lies in a radical change in the construction of anesthetic apparatus. He recommends that it be constructed wholly of metal or other material that is a good conductor of electricity; that the use of ordinary rubber should be given up except in the tube leading to the face piece which, however, may be lined with wire gauze and not merely coiled wire. An apparatus thus constructed would probably be incapable of developing or retaining highly localized electrical charges which are thought by many to be the cause of explosions.

All hospital administrators and surgeons who have made any study of this problem cannot fail to concur in the recommendations made by this committee of the American Medical Association. They are briefly as follows:

1. The eradication of all possible sources of ignition in and about the operating room. This recommendation applies to care in the use of cautery near the patient's head or in the pleural cavity during ether or ethylene anesthesia.

2. The correction of wiring difficulties in or about the operating room and strict attention to repairs of motors of suction apparatus, diathermy and other equipment.

3. When cautery is used in the abdomen, the placing of screens to prevent any current of air carrying inflammable gas or vapor in that direction from the mask.

4. The prohibiting of smoking or the use of an open flame in the operating room.

5. The enclosure of all electrical apparatus.

6. The modification of the construction of suction apparatus to prevent the escape therefrom of anesthetic gases or vapors.

7. Danger seems to lie not so much during the stage of anesthesia in which 90 per cent and 10 per cent of ethylene and oxygen are being used respectively, but at the conclusion when the most explosive combination appears to be 25 per cent ethylene and 75 per cent oxygen.

8. The proper grounding of table, apparatus, floor and perhaps patients themselves.

9. The humidifying of operating rooms to about 55 per cent. This seems to have served a useful purpose.

10. The moistening of gases by bubbling them through water and placing a wet sponge in the rebreathing bag. These are worthy of trial.

11. The elimination of nonconducting rubber and as far as possible the use of metal in the construction of the entire anesthetic apparatus.

Right to Administer Drugs Denied to Restricted Licensees in Illinois

Persons holding licenses under the medical practice act of 1923, and holders of restricted licenses under prior acts, giving them the right only to practice osteopathy and obstetrics may not use anesthetics and other drugs and medicines in obstetrical cases, according to a ruling of the attorney general of Illinois, Oscar E. Carlstrom.

Such practitioners, therefore, in the opinion of Mr. Carlstrom, are not entitled to register under the Harrison Antinarcotic Act to obtain narcotics for their obstetrical practice, since under the provisions of that act practitioners may register only if they are lawfully entitled to administer narcotics to patients.

In examining applicants for licenses under the state statute to practice systems or methods of treating human ailments without the use of drugs or medicines and without operative surgery, the subject of materia medica is excepted from the examination of such applicants, Mr. Carlstrom explained in his opinion to the director of the Department of Registration and Education, M. F. Walsh.

The attorney general quoted from an opinion of the Illinois supreme court to the effect that "the practitioner who possesses a restricted license voluntarily imposed upon himself the limitations under which he practices."

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Your Everyday Problems

A department devoted to the informal discussion of problems arising in the everyday life of the hospital superintendent.

[No attempt has been made to offer final conclusions relative to the questions considered in this department. THE MODERN HOSPITAL will gladly welcome further comment by its readers on any of these problems, or the presentation of other queries for discussion in later issues.—Editor.]

Is Group Nursing of Private Patients Economical and Practical?

Some institutions in the field have apparently satisfactorily worked out the principle of group nursing as applied to private and semiprivate patients. The demand for the more economical care of the middle class patient has been largely responsible for this development. In some hospitals, even though they are not specifically constructed for this purpose, a wing has been set aside for the treatment of this type of patient. In one particular institution, such a division consists of twelve beds to which are assigned four day and three night nurses. The patients in these rooms pay $5 for twenty-four hours of nursing service. When it is considered that two special nurses will cost approximately $17 a day, the rate that this hospital has set is, to say the least, economical from the patient's standpoint. These nurses receive $125 a month in addition to their board and laundry. They are allowed two hours each day, one-half day a week and a whole day a month off duty.

In this instance, providing, of course, that such nursing service is adequate and satisfactory so far as the patients are concerned it can be said that the institution is in reality receiving a profit from this division. Financially, if more intensive nursing is required by these patients, it would be possible to add one or two nurses to the group and still not lose money.

It would seem, therefore, that the principle of group nursing for semiprivate and private patients is sound. The foregoing illustration has been set down as a sample of the possibilities represented by the adoption of such a policy and serves to demonstrate that for certain types of patients sufficient nursing can be provided at a much lower rate than is usually charged.

THE MODERN HOSPITAL believes that other institutions should work out and refine this practice with an idea of lessening the outlay of money usually necessary for nursing the patient.

Is the Superintendent Responsible for the Accuracy of the Accounts of the Hospital's Cashier?

This question was asked by a perplexed executive in an eastern state who supplies the following details: A hospital cashier who had served in an institution for a number of years was found to have carelessly, if not actually dishonestly, handled the funds of this institution. This employee was serving as cashier before the inquiring superintendent took charge and remained in this position after she had left. The board of officers refused a recommendation to this executive because after her departure from the institution irregularities in the cashier's accounts were discovered. Such an attitude on the part of an institutional board of trustees appears unfair. The accounts of the hospital cashier in question had been audited twice yearly in conformity with the regulations of the board and the superintendent had no reason to believe that such a safeguard was not entirely efficient and satisfactory. The executive, upon her assumption of administrative duty, had recommended that this official be continued in office since she had no reasons to suspect that she was either inaccurate or dishonest.

The hospital, in the broadest sense, is responsible for the actions of its employees. This superintendent, in a measure at least, must share the responsibility for continuing to employ a dishonest person. And yet, with the usually satisfactory precautions having been taken and in consideration of the fact that the superintendent had voluntarily left her position before such irregularities were discovered, there appears to be no reason why a board of trustees should endeavor to punish a conscientious executive because of another's faults, the responsibility for which it certainly should share. It is such unwise and unjust procedures as this that prevent hospitals, even though they possess fine physical plants, from securing the services of high grade men and women because of a fear that eventually they will be the recipients of unfair treatment should they connect themselves with such an institution.

Is There a Standard Employee to Patient Ratio?

From time to time, boards of trustees are led to inquire as to the necessity for the expenditure of such major sums as appear necessary for the payment of the salaries and wages of the hospital's personnel. It has been stated on a number of occasions in this magazine that it should rarely, if ever, be necessary to allot more than one-half of the whole hospital cost of operation to the payment of salaries. In some institutions, although perhaps they are not properly staffed, not more than one-third of the total outlay is required for this item. More or less definite statements have been made relative to the number of nurses required for the care of patients. This ratio has been set as properly approximating one nurse for every three patients. In children's institutions, there may be one nurse for every patient. But taking the hospital personnel as a whole, the number of employees per patient will, of course, greatly exceed this ratio.

Many factors influence the necessary number of persons required to care for the sick. The children's hospital requires more help than a general hospital and an institution caring for acute cases more than one that cares for chronic cases. The salary scale, in effect, is also an important factor insofar as the number of employees required is concerned. After all, it is not purely

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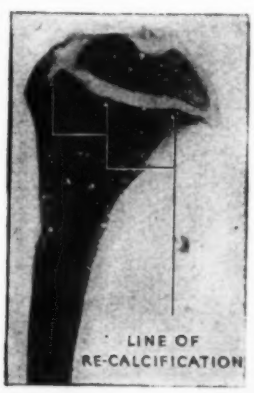

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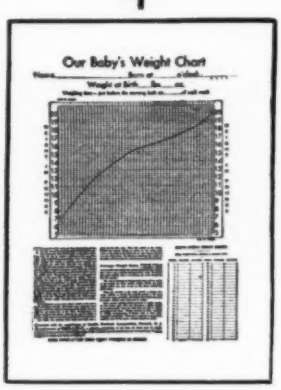

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a question of numbers. Efficient workers can be secured only by the payment of a living wage. It may be possible in a city institution, for example, for three orderlies or cleaners receiving $40 a month each to be required to perform the work that two well-paid, physically strong persons might do. The ratio of persons to patients under such circumstances would be somewhat misleading. The lay public finds it difficult to understand why hospitals should be willing to employ physically broken down men and women at extremely meager salaries to care for the sick, whereas no such type of help would be countenanced for a moment in the industrial field.

Economically and socially speaking, a proper ratio of employees to patients in a general hospital with the average type of clientele will usually range from 1.25 to 1.50 persons to each patient. This, of course, includes medical, janitorial, mechanical and all other types of workers receiving pay from the institution. The number of unpaid staff members is not included in such a computation. When the ratio falls much below one employee for each patient, the possibility of properly rendering the fullest and most efficient type of service should be seriously doubted.

What Is to Be Done When a Surgeon Refuses to Accept the Diagnosis of the Pathologist?

This question was asked by an administrator, apparently in much distress of mind. He submits the following details:

A patient recently was admitted to a private room in an Eastern institution, suffering from a tumor of the neck. A biopsy was done and the pathologist reported that the tissue submitted to him consisted of an adenocarcinoma in an early stage. The surgeon, a practitioner with many years of experience, without studying the slides openly expressed the conviction that the pathologist's diagnosis was not correct and proceeded in his treatment to ignore the warnings that such a histologic report should carry. The adenopathy received simple excision and the patient was soon discharged from the hospital. Several weeks later, the same patient was readmitted with all the signs of a malignant metastasis. He eventually died of a malignant condition of the lung.

It would seem in this instance that the life of this patient was sacrificed because of a professional stubbornness on the part of the surgeon. Upon the original admission to the hospital, no evidence of metastasis was observed and the tumor was apparently in an early stage of malignancy. There is little doubt that this unsuccessful outcome could have been postponed for many months or years if the surgical pathologist's warning had been heeded. Many professional members of the old school are inclined to scoff at the necessity of laboratory methods in the diagnosis of disease. It is true that physicians of yesterday possessed relatively greater natural diagnostic skill than those of to-day because they were not aided by instruments and methods of precision. And yet, in this age of scientific enlightenment, there is hardly any excuse for the occurrence of such an incident as has been described.

In this instance, it perhaps would not be unwise for the medical administrative body of this hospital, whether it be an executive committee or a similiarly organized group, to ask the physician in question the reason for his apparent diagnostic obtuseness. No hospital has a right to permit such apparent and preventable errors of diagnosis to be repeated. If an institution possesses staff members who refuse to be governed by the reports of a laboratory well and scientifically staffed it would perhaps be an act of good judgment to replace such persons with those whose training prompts them to cooperate more fully with every other diagnostic and therapeutic department within the institution. If the staff will not act, then the board of trustees, when such an incident is brought to its attention, should take drastic steps to place in positions of prominence only physicians who will safeguard in a more efficient way the lives of the patients entrusted to them.

Can Postmortem Percentages Be Too High?

It is commendable that so many institutions are striving, and successfully so, to elevate their postmortem percentages. The reports from hospital and medical associations are encouraging, insofar as the continued maintenance of interest in this matter is concerned. Visiting physicians and interns are being repeatedly urged to secure more permission for postmortems. It is feared that in some instances the impression is given that permission for autopsy must be secured at any cost. As a result, the confidence of the institution's clientele is sometimes shaken by the ruthless manner in which arguments or even demands for postmortems are presented. No greater mistake than this can be made.

A reasonably high percentage of examinations of the bodies of patients who have succumbed in the hospital may be made without incurring the antagonism of their relatives or without shaking their belief that the hospital desires to be considerate and kind in all of its dealings with the public.

The number of properly secured postmortem permissions cannot be too great. But the price of such permissions is certainly not a lie. When it is found necessary to employ deceit and subterfuge in securing such permits, someone is failing properly to instruct hospital interns and others as to the best methods to employ. Certainly one need not be in the least heartless or brutal in order to secure a signature on the autopsy permission blank. In those hospitals which are enjoying the greatest success in autopsy work, the medical director or some other interested person is continually urging that there be no lagging in properly pressing this matter. And yet, if a high postmortem percentage is not possible without stultifying the soul of the individual or the institution, any ratio is certainly too high. Information secured at the postmortem table is dear indeed if it costs the confidence and respect of the hospital's community.

Again, postmortem percentages are too high if more pathologic material is secured than can be properly studied. The mere incision of tissues and the microscopic inspection of pathologic organs are but a part of the work necessary to complete a proper postmortem examination. If laboratory facilities are so inadequate that tissues cannot be studied histologically and a full report properly inscribed on the patient's chart, much benefit is lost.

This statement is not intended to discourage keenness of effort in securing postmortem examinations. If such a document has been signed by the relative, the hospital takes upon itself a serious obligation. Morally, at least, it binds itself to secure all the information possible in order to prevent others from succumbing to the same ailment. A high percentage of postmortem examinations is necessary in order that the hospital may fulfill its fullest obligation to the community and to medicine generally. But it must not, it need not, sacrifice any of the finer aspects of the relationship between the patient and the hospital and the doctor.

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*King, J. Cash, and Cocke, Edwin W.: Therapeutic Fever Produced by Diathermy, with Special Reference to its Application in the Treatment of Paresis. South. Med. Jour., Mar., 1930.

See also Illinois M. J., LVI:3:203, Sept. 1929, "Artificial Fever Produced by High Frequency Currents—Preliminary Report." By Clarence A. Neyman, A.B., M.D., and S. L. Osborne, B.B.E.

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NEWS OF THE MONTH

Life of the Catholic Hospital Theme of Washington Meeting

THE resources of the Catholic Hospital Association were generously placed at the disposal of the American Red Cross for relief work in Santo Domingo by a resolution introduced by the president of the association, the Rev. Alphonse M. Schwitalla, dean, St. Louis University School of Medicine, St. Louis, at the closing session of the fifteenth annual convention of the association, held at Catholic University, Washington, D. C., September 2-5. The Santo Domingo catastrophe occurred during the session and before any appeal had been made from the Red Cross headquarters the association tendered its generous offer.

This year's meeting proved to be as successful as those in years past. Sessions were held in McMahon Hall and in Maloney Auditorium, with the exhibit filling the ground floor of the Catholic University gymnasium.

The general theme of the program was "The Life of the Catholic Hospital" and this was divided into "Spiritual Life," "Educational Life," "Economic Life," "Scientific Life" and "The Life of the Schools of Nursing."

On Tuesday morning Solemn Pontifical Mass was celebrated in the National Shrine of the Immaculate Conception, and this was followed by the opening session at which Father Schwitalla presided. Greetings from the Catholic University, the presidential address and the report of the executive board were heard.

Dr. William Gerry Morgan, Washington, D. C., president of the American Medical Association, presided at the afternoon session, at which time medical subjects were discussed by the Rev. John L. Gipprich, regent, School of Medicine, Georgetown University, Washington, D. C., Dr. Louis D. Moorhead, dean, Loyola University School of Medicine, Chicago, Dr. Herman von W. Schulte, dean, Creighton University School of Medicine, Omaha, Neb., and Dr. Fred C. Zapffe, secretary, Association of American Medical Colleges, Chicago. Two other sessions were held at McMahon Hall Tuesday afternoon. Father Maurice F. Griffin, vice-president of the association, Cleveland, presided at the one held in the auditorium on "The Educational Life of the Hospital," and the Rev. P. J. Mahan, regent, Loyola University School of Medicine, Chicago, presided at the one in the lecture room on a similar subject.

Work of Nursing Sisters Considered

On Wednesday morning a general meeting was held at the Maloney Auditorium with Father Schwitalla presiding. "Organizing Hospital Work for Hospital Sisters," "The Religious Life of the Sister Nurse in Relation to the Administrative Problems of the Hospital," "Spiritual Care of the Student Nurse," "Vocations to the Nursing Sisterhoods," "Missionary Spirit," and "The Religious Influence of the Catholic Hospital on the Patient" were the subjects discussed.

Three sectional meetings were held on Wednesday afternoon, Sister M. Helen, director, social service department, Mercy Hospital, Baltimore, presiding at one, Sister Rose Alice, superintendent, St. Joseph's Hospital, Elmira, N. Y., at another and Dr. Malcolm T. MacEachern, director of hospital activities, American College of Surgeons, Chicago, at the third.

Prominent Men on Thursday's Program

A general meeting was held Thursday morning with the Rev. Joseph F. Higgins, Pueblo, Colo., national chairman, vocations committee, Catholic Hospital Association, presiding. At this time Col. Weston P. Chamberlain, Medical Corps, U. S. Army, Washington, D. C., Hugh S. Cumming, Surgeon General, U. S. Public Health Service, Washington, D. C., the Right Rev. P. L. Ireton, pastor, St. Anne's Church, Baltimore, the Rev. John R. MacDonald, pastor, St. Andrew's Church, St. Andrews, Nova Scotia, Sister Claudia, registrar, Nazareth Convent, Nazareth, Mich., Dr. Joseph D. Morrow, medical director, Bergen County Hospital, Ridgewood, N. J., and Father Schwitalla spoke.

Sectional meetings were held on Thursday afternoon with Anna E. Boller, president, American Dietetic Association, Chicago, presiding at one, the Rev. Joseph S. O'Connell, associate director, division of health, Archdiocese of New York City, at another, and Sister Helen Jarrell, dean, St. Bernard's School of Nursing, Chicago, at the third.

The last meeting was held on Friday morning with Sister M. Rose, superintendent, Mercy Hospital, Pittsburgh, in charge.

The following officers were elected for the coming year: the Rev. Alphonse M. Schwitalla, president, the Rev. Maurice F. Griffin, vice-president, and Sister M. Irene, general secretary of the Sisters of St. Mary, St. Mary's Hospital, St. Louis, secretary-treasurer.

The two new members of the board are Mother William, Convent of the Incarnate Word, San Antonio, Texas, and Mother Frances, St. Joseph's Hospital, Orange, Calif. Others on the board are Sister Mary Rose, Sister Helen Jarrell, Sister Marie, St. Mary's Hospital, Green Bay, Wis., and Mother Allaire, Gray Nunnery, Montreal.

Those attending the meetings took many trips of interest to points around Washington. Practically the entire delegation participated in the memorial service held at the Nuns of the Battlefield Monument, Rhode Island Avenue and M Street, when Father Schwitalla placed a wreath at the base of the monument on behalf of the delegates. The Rev. W. P. Whalen spoke.

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News of the Month

Occupational Therapy Program Is Replete With Interest

THE completed program of the fourteenth annual meeting of the American Occupational Therapy Association to be held in New Orleans for four days beginning October 20 has been announced and promises to be replete with interest.

Registration will take place on Monday morning, with the program proper opening on Monday afternoon. The president's address will be given by Thomas B. Kidner, who has been acting president of the association since the death of Dr. C. Floyd Haviland. A memorial address for Doctor Haviland will be given by Everett S. Elwood, National Board of Medical Examiners, Philadelphia, and one for Dr. B. W. Carr, vice-president of the association until his death, will be given by Dr. Harry H. Kefauver, U. S. Veterans' Bureau, Washington, D. C.

Dr. Joseph C. Doane, medical director, Jewish Hospital, Philadelphia, will speak on "Methods of Demonstrating to the Medical Profession the Value of Occupational Therapy." Another subject listed on this program is "The Necessity of Medical Direction and Supervision of Curative Occupations." Reports to be given include that of the secretary-treasurer by Eleanor Clarke Slagle and of the finance committee by Mrs. Frederick W. Rockwell, chairman, Philadelphia. At the close of the meeting an informal reception will be held so that delegates may meet the officers and board of management.

Special Session on Tuberculosis Planned

The session on tuberculosis will be held on Tuesday morning. The first speech will be given by Howard T. Henderson, Essex Mountain Sanatorium, Verona, N. J., and will have as its theme the application of occupational therapy on a graduated scale to patients in a tuberculosis sanatorium. This will be discussed by Mrs. Gertrude Sample, U. S. Veterans' Bureau Hospital, Hines, Ill. Dr. Mayer A. Newhauser, U. S. Veterans' Hospital, Alexandria, La., will describe the rôle and usage of occupational therapy in the treatment of actively advanced pulmonary tuberculosis. R. R. Rosell, National Food Bureau, Chicago, will give an outsider's viewpoint of occupational therapy and vocational training in a sanatorium and their relation to aftercare, while Mary L. Rowe, director of occupational therapy, Glen Lake Sanatorium, Oak Terrace, Minn., will discuss the same subject from an insider's viewpoint. Margaret Biggerstaff, director of occupational therapy, Broadlawns Hospital, Des Moines, Iowa, will speak on "Some Problems of Organization of Occupational Therapy in a Public Tuberculosis Sanatorium," a subject that will be discussed by Irene Grant, director of occupational therapy, Muirdale Sanatorium, Wauwatosa, Wis.

The business session will be held on Wednesday. Only members of the association are invited to this session at which will be heard the report on national registration to be presented by T. B. Kidner, chairman, and the report of the committee on nominations to be presented by Florence M. Northrup, Michael Reese Hospital, Chicago. The election of officers will close this session.

The mental hospital is to be the subject under consideration at the Thursday session. Dr. C. D. Mitchell, superintendent, Mississippi State Hospital, Fondren, will speak on occupational therapy in a mental hospital in Mississippi and his speech will be discussed by Eleanor Clarke Slagle, director, bureau of occupational therapy, New York State Department of Mental Hygiene. Other addresses will be given as follows: "The Neuro-Psychiatric Service in General Hospitals With Special Reference to Occupational Therapy," Dr. Isham Kimbell, U. S. Veterans' Hospital, Alexandria, La.; "Correlating Occupational Therapy and Recreation," Mary E. Black, chief of occupational therapy, and Edith C. McPhee, State Hospital, Traverse City, Mich.; "Occupational Therapy for Men and Women at Bloomingdale Hospital, White Plains, N. Y.," Frances Patton, director, women's occupational therapy department, and Louis J. Haas, director, men's occupational therapy department. A report of the committee on teaching methods will be presented by Mrs. Carl H. Davis, chairman.

It is expected that many association members will participate in the boat trip on the Mississippi River on Wednesday evening, which has been arranged for the entertainment of all of the convention delegates and their guests.

The usual exhibit of patients' work, charts of organization, plans and photographs will be held. Exhibits will be grouped in four divisions as follows: hospitals; curative workshops (nonhospital); homebound; occupational therapy training schools.

No More Nurses Needed in the Palm Beaches

From the chairman of the publicity committee, Florida State Nurses' Association, District No. 9, comes the following notice: "The Florida State Nurses' Association, District No. 9, wishes to advise that there is a sufficient number of local nurses in the Palm Beaches to care for all needs for the coming season."

Four Registered Nurses Receive A.B. Degree

Four registered nurses received the bachelor of arts degree from St. Joseph's College, Guthrie, Okla., at the end of its summer session in August. Those receiving the degree were Sister M. Pancratia, Sister M. Clara, Sister M. Francis and Sister M. Augustine, all of St. Anthony's Hospital, Oklahoma City, Okla.

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News of the Month

Canada and Western States Hold Successful Hospital Meet

FOR the first time a hospital association of a Canadian province and state hospital organizations from the United States met in combined convention when the four-day meeting of the British Columbia Hospitals' Association, the Western Hospital Association and the Northwest Hospital Association opened in Vancouver, B. C., August 19.

British Columbia elected officers for the coming year as follows: president, J. H. McVety, Vancouver; first vice-president, J. M. Coady, Vancouver; second vice-president, Dr. E. M. Pearse, Provincial Royal Jubilee Hospital, Victoria; treasurer, Miss G. M. Currie, North Vancouver Hospital, Vancouver; secretary, Mabel F. Gray, department of nursing and health, University of British Columbia, Vancouver. The Hon. S. L. Howe was made honorary president, and Dr. M. T. MacEachern, director of hospital activities, American College of Surgeons, Chicago, and J. J. Banfield, Vancouver, were made honorary life members of the association.

The Western Hospital Association elected officers as follows: president, G. W. Olson, superintendent, California Hospital, Los Angeles; first vice president, J. H. McVety, Vancouver, B. C.; second vice-president, Dr. Howard H. Johnson, director, St. Luke's Hospital, San Francisco; third vice-president, Alice G. Henninger, superintendent, Pasadena Hospital, Pasadena, Calif.; secretary, Grace Phelps, superintendent, Doernbecher Memorial Hospital for Children, Portland, Ore.; treasurer, Ellard L. Slack, superintendent, Samuel Merritt Hospital, Oakland, Calif. Dr. M. T. MacEachern was elected honorary president, and Emily L. Loveridge, superintendent emeritus, Good Samaritan Hospital, Portland, was elected honorary vice-president. Officers of the Northwest Association remain the same: president, Carolyn E. Davis, superintendent, Good Samaritan Hospital, Portland; first vice-president, Grace Phelps; second vice-president, May Loomis, superintendent, Seattle City Hospital, Seattle, Wash.; secretary, Mrs. Cecil Tracy Spry, Tacoma, Wash.; treasurer, the Rev. Axel M. Green, superintendent, Emanuel Hospital, Portland.

Eminent Australian Speaks on Administration

The convention was largely attended, the attendance ranging at times as high as 300 persons. The discussions were extremely interesting.

One of the outstanding addresses of the program was that given by Sir James Barrett, eminent medical man of Melbourne, Australia, who urged a cooperative system of hospital administration, declaring that it had been the means of preventing the insolvency of the leading Australian institutions. According to Sir James, there are at present forty-four nursing centers and twenty-five hospital centers operating under the Victorian bush nursing scheme. Subscribers pay an annual fee and are not called upon to pay when they are patients at the institutions. Those who do not subscribe must pay full rates. Sir James said that such a scheme should work well in cities. Since most persons must go to the hospital some time or other, why should they not pay in advance? he asked.

Well known hospital and medical workers appearing on the program included: H. E. Young, Victoria, B. C., provincial health officer, Province of British Columbia; Doctor MacEachern; Doctor Howard H. Johnson; Dr. G. Harvey Agnew, secretary, hospital department, Canadian Medical Association; Matthew O. Foley, editorial director, *Hospital Management*, Chicago; G. W. Olson; J. H. McVety; Emily L. Loveridge; Carolyn E. Davis; Clara E. Jackson, superintendent, King's Daughters Hospital, Duncan, B. C.; Helen Randall, registrar, British Columbia Nurses' Association, Vancouver; Sister John Gabriel, educational director for schools of nursing, Sisters of Charity of Providence in the Northwest, Seattle, Wash.; Mabel F. Gray, assistant professor of nursing, University of British Columbia, Vancouver; Grace M. Fairley, superintendent of nurses, Vancouver General Hospital; Dr. W. B. Burnett, Vancouver.

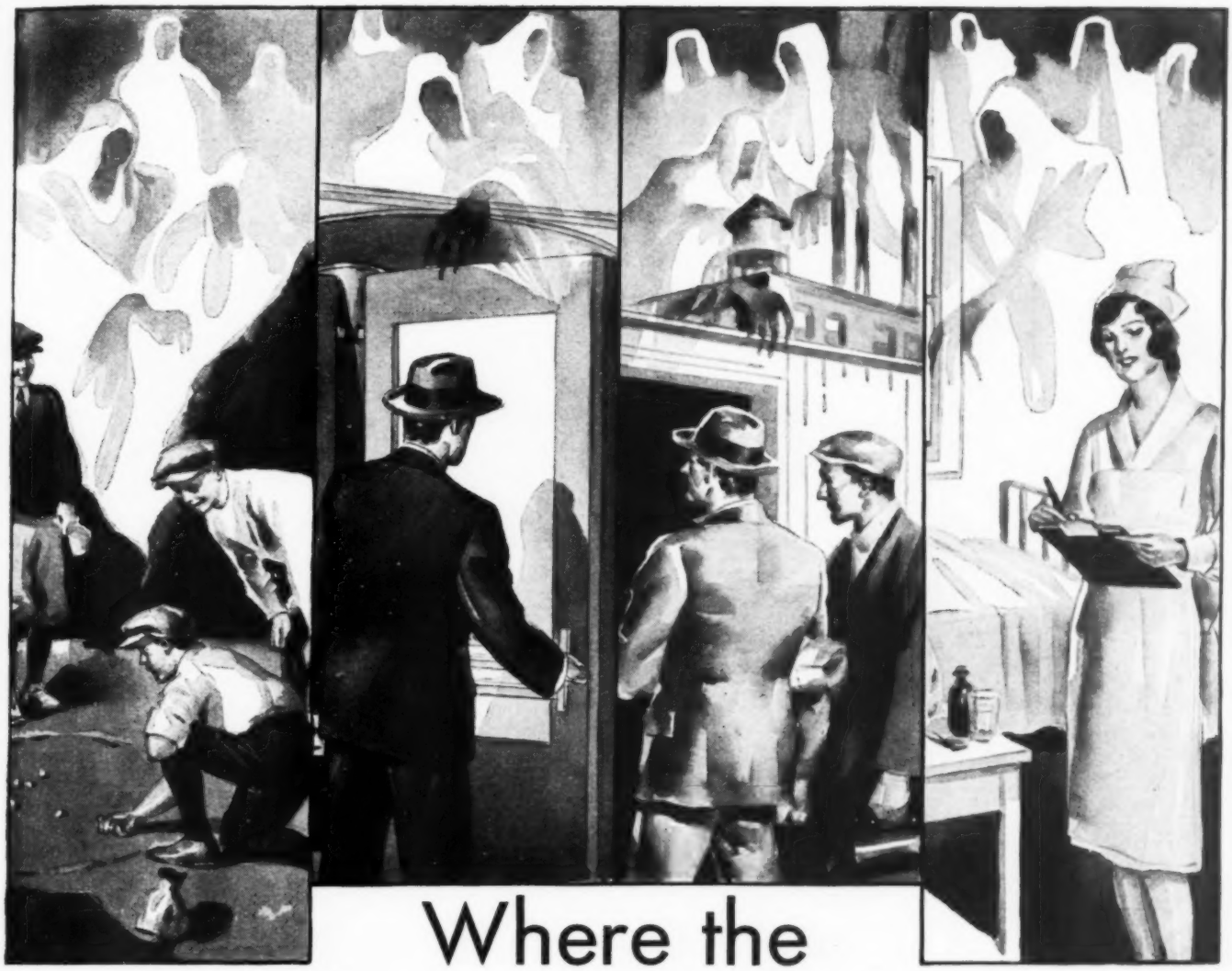
Interesting Dietetic Program Presented

Appearing on the program of the dietetic section were: Ethel C. Pipes, chief dietitian, Vancouver General Hospital; Dr. H. W. Hill, director of laboratories, Vancouver General Hospital; Harry R. Beard, Vancouver; Martha Koehne, vice-president, American Dietetic Association; J. B. Jervis, lecturer of veterinary science, University of British Columbia.

Prominent on the woman's auxiliaries and social service program were: J. M. Coady; Mrs. A. C. Wilkes, convenor of the auxiliaries' committee of the British Columbia Hospitals' Association; Grace Fairley; Amelia Feary, director of social service, Doernbecher Memorial Hospital for Children, Portland, Ore.; Elizabeth McKinley, field director, the American Red Cross.

Those who took part in the open sessions included: C. H. Gibbons, secretary, Royal Commission on State Health Insurance and Maternity Benefits; Dr. G. A. Ootmar, medical health officer and bacteriologist, British Columbia; C. J. Cummings, superintendent, Tacoma General Hospital, Tacoma, Wash.; Dr. George A. Greaves, director, physical therapy department, Vancouver General Hospital; Alice G. Henninger; Dr. Helen G. Steward, director of Carnegie Libraries, New Westminster, B. C.; Kathryn K. Meitzler, superintendent, New Cedars of Lebanon Hospital, Los Angeles.

A special compliment was paid to Doctor MacEachern, for nine years head of the Vancouver General Hospital, when he was presented with a silver tea service by Mayor W. H. Malkin of Vancouver as a token of the city's appreciation for his gratuitous services in the recent hospital survey in Greater Vancouver.



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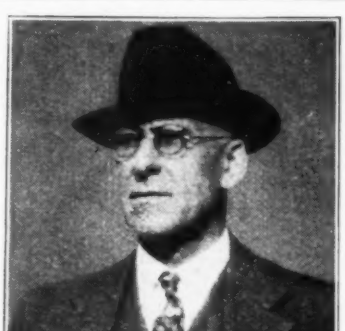
Every school, industrial plant, hospital, public building and similar place where humans gather is a potential rallying ground for the unseen legions of mankind's greatest enemy.



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News of the Month

600 Dietitians Enjoy Hospitality of Toronto

THE meeting of the American Dietetic Association in Toronto, Ont., September 8 to 11, brought to a close the twelfth year in the history of the association. The well planned program prepared under the supervision of Anna E. Boller, Rush Medical College, Chicago, president of the association, and the delightful entertainment prepared by the local committees provided more than 600 dietitians who attended with four wonderful days in Toronto.

One of the important measures taken at the business meeting was to make official the spelling of dietitian with a "t" rather than with a "c." A formal definition of the word was also adopted.

Dr. Lillian B. Storms, Freemont, Mich., chairman of the reclassification committee, which has been studying the reclassification of dietitians in government service by the personnel classification board, gave an interesting report on this subject.

Miss Gillam Becomes President

The following officers were elected for the coming year: president, S. Margaret Gillam, University Hospital, Ann Arbor, Mich.; president-elect, Dr. Martha Koehne, Ann Arbor; first vice-president, Ruth M. Cooley, Jewish Hospital, St. Louis; second vice-president, Mary I. Barber, Battle Creek, Mich.; secretary, Phyllis D. Rowe, Johns Hopkins Hospital, Baltimore; treasurer, Katherine M. Thoma, Michael Reese Hospital, Chicago.

Dr. J. P. Gilchrist, Toronto, the first man to receive insulin, gave the first paper on "Insulin and the Clinician," followed by Dr. R. B. Gibson, Iowa City, Iowa, who discussed "Experimental Studies on the Carbohydrate Tolerance in the Diabetic," and Dr. W. R. Campbell, Toronto, with a paper on "The Available Carbohydrate Contents of Some Foods."

The diet therapy section meeting included a paper by Dr. A. A. Fletcher, Toronto, on "Nutrition and Diet in Chronic Arthritis," and a talk, illustrated with slides by Dr. T. G. Drake, Toronto, on "Vitamin Therapy." At the dinner given by this section on Monday evening, the report of Mary M. Harrington, Harper Hospital, Detroit, on "Standardized Recipes for Weighed Diets," and the article of Nelda Ross, Presbyterian Hospital, New York City, "The Use of Dietary Case Studies" were particularly interesting.

Those who attended the administration section meeting heard a splendid program, which included suggestions for the purchasing agent in a paper on the "Legal Aspects of Purchasing," by C. P. Slater, Iowa City, Iowa, and one on "Standards for Tray and Dining Room Service," by Helen E. Gilson, Pennsylvania Hospital, Philadelphia, who showed a moving picture to illustrate her talk. At the dinner of this section, Violet M. Rylie, and Kathleen Jeffs, both of the T. Eaton Company, Ltd., gave interesting talks on their work and its history and Rose Baker reported a comprehensive survey on dietary department personnel.

The education section meeting and dinner program had a number of interesting papers, among them "Changing in Nursing Education," by Anna W. Goodrich, and "The Nutrition Training in the Clinical Years of a Medical Course," by Dr. H. S. Houghton, Iowa City, Iowa. Comprehensive and excellent reports gave proof of the immense amount of work accomplished during the past year by this section.

The social service section program contained two particularly interesting papers, one by Laura Comstock, Rochester, N. Y., on the subject of "Interpreting Nutrition to Industry," and the other by Esther Erickson, on "Interpreting Nutrition to Homes." Eleanor Wells, New Zealand, Lillian Smith, Australia, and Elspeth Marshall, England, contributed their views on "The Dietary Department's Function in the Hospital" as it appears in their respective countries.

The Hon. William Renwick Riddell, justice of the court of appeals, Toronto, contributed greatly toward the success of the banquet with his delightful talk on "Dietetics in the Middle Ages."

At the reunion luncheon the first day, greetings were brought by Jean R. Gunn, superintendent of nurses, Toronto General Hospital, from the registered nurses of Ontario, and by Professor De Lury of the University of Toronto from the president of the university. These were accepted by Miss Boller, who also welcomed the members and guests.

At the open forum luncheon on Tuesday, a code of ethics was presented and tentatively approved. Lita Baine, of the *Ladies' Home Journal*, gave an inspirational talk on "What Is the Professional Attitude?" and Dr. Lillian B. Storms, presented some suggestions for combating "Diet Fads and Food Fakes."

Many Social Features on Program

Those attending the convention were entertained at three teas, one at the University Women's Club, given by the Quebec Dietetic Association, one at the Royal York Hotel, by the Ontario Dietetic Association and one at the University of Toronto, by the alumnae and staff of the department of household science.

An enjoyable evening was spent when the members were guests of Lady Eaton, and the directors of T. Eaton Company, Ltd., at a beautifully served and elaborate dinner,

One of several attractive trips took in the Connaught Laboratories, where insulin is made, the new Banting Research Building, and a clinic at Toronto General Hospital, at which Dr. E. E. Greville gave a talk on "Dietetic Treatment in Diseases of the Colon," and Dr. R. F. Farquharson gave a paper on "Liver Preparation in the Treatment of Pernicious Anemia."

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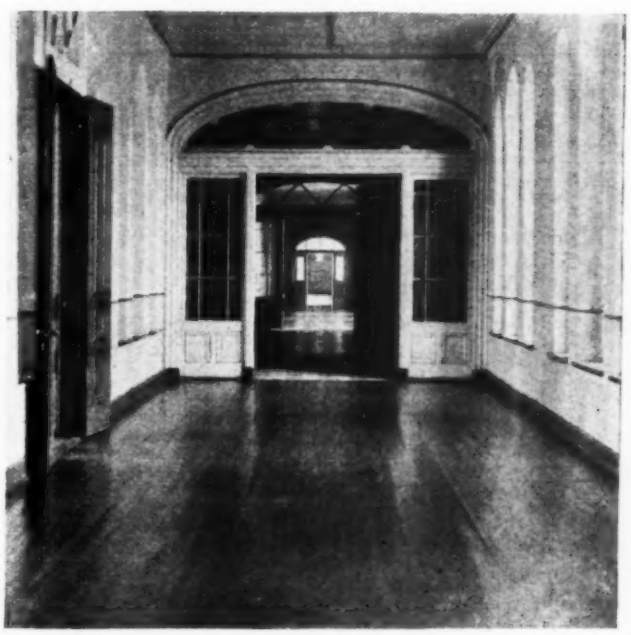

JOHNSON'S WAX

News of the Month

Record Librarians Ready for Third Annual Conference

Meeting simultaneously with the American College of Surgeons, the Association of Record Librarians of North America will hold its third annual conference in Philadelphia, October 13 to 17.

On the first day, which is Monday, the members will occupy themselves with registering, with attending sessions of the College of Surgeons and with tours around Philadelphia.

The program proper will begin on Tuesday with addresses by Jessie Harned, librarian, Rochester General Hospital, Rochester, N. Y., president of the association, Grace W. Myers, librarian emeritus, Massachusetts General Hospital, Boston, and Dr. Malcolm T. MacEachern, director of hospital activities, American College of Surgeons. Irene Johnson, clerical supervisor, University of Pennsylvania Graduate Hospital, Philadelphia, will bring greetings from the Philadelphia Record Librarians Association. Clara A. Doolittle, record librarian, Waterbury Hospital, Waterbury, Conn., will present a paper on "How to Organize the Local Association," which will be discussed by Matthew O. Foley, editorial director, *Hospital Management*, and Alice G. Kirkland, record librarian, Samuel Merritt Hospital, Oakland, Calif. Gladys Bayne, assistant director of nursing service, Grasslands Hospital, Valhalla, N. Y., will speak on "Training the Student Nurse to Keep Worth While Records," Grace W. Myers, honorary president of the association, will speak on "Qualifications of the Record Librarian," and Dr. T. R. Ponton, superintendent, Lord Lister Hospital, Omaha, Neb., will present a paper on "Selection and Management of Personnel." A general discussion will end the day's program.

Librarians Will Attend A. C. S. Meeting

The librarians will attend the College of Surgeons' program on Wednesday morning, continuing their own program in the afternoon and evening. Papers will be presented as follows in the afternoon: "Functions of the Record Committee," Dr. Don K. Hutchins, Rochester, N. Y.; "Unit Filing System," Florence G. Babcock, librarian, University Hospital, Ann Arbor, Mich.; "Central Information Files for Hospitals," William C. Waugh, Boston, Remington Rand, Inc. The annual banquet will be held in the evening, with Robert Jolly, superintendent, Baptist Hospital, Houston, Tex., presiding. After the introduction of guests, addresses will be heard as follows: "Fitting Into the Hospital Organization," Dr. Malcolm T. MacEachern; "The Importance of a Standardized Hospital Medical Accounting," the Rev. Alphonse M. Schwitalla, dean, St. Louis University School of Medicine, St. Louis, president, Catholic Hospital Association; "Ideals and Realisms," Dr. Joseph C. Doane, medical director, Jewish Hospital, Philadelphia; "Experience in Establishing Accredited Hospitals," Dr. B. W. Black, medical director, Alameda County Medical Institutions, Oakland, Calif.

Thursday morning will be devoted to conducted tours to Philadelphia hospitals, these tours having been arranged by the Philadelphia Record Librarians Association. In the afternoon "Medical Accounting" will be discussed by Dr. George Gray Ward, chief surgeon, Woman's Hospital, New York City, "Nomenclature Problems," by Dr. H. B. Logie, New York City, executive secretary, National Conference on Nomenclature of Disease, and "The Out-Patient Department," by Dr. James W. Manary, director, out-patient department, Boston City Hospital, Boston. Dr. T. R. Ponton will lead a general discussion on these papers. Two surgical films will be shown in the evening and explained by Dr. Thomas H. Cherry, New York City, and Dr. W. R. MacAusland, Boston.

The session will close Friday morning, with a round table conference, reports of committees, election and installation of officers and the addresses of the retiring and incoming presidents.

One Hospital's Record of Service in Caring for Cripples

Exceeding all previous records in number of patients cared for, the Hospital for Joint Diseases, New York City, last year gave 57 per cent of its services free to needy patients regardless of nationality, religion or color. Fifty-two nations were represented among its patients. These facts are revealed in the twenty-third annual report of the institution recently made public through the United Hospital Fund of which it is a member.

During the year 99,349 hospital days of care were provided for 4,827 patients. Of these 57,362 were free. In addition the out-patient department provided 238,944 treatments, of which 26,000 were for new patients.

Frederick Brown, president of the institution, reviews the activities of the hospital in a section of the report which covers the institution proper, the out-patient department, the social service department, the ladies' auxiliary and the country home (the Natalie and Louis Heinsheimer Memorial) at Far Rockaway. The year was marked by an expansion of activities, the president reported.

During the year Mr. Brown established orthopedic research fellowships annually of $2,400 each, which were awarded to Dr. David Sashin, Dr. David H. Kling and Dr. Louis Nathan, who are now engaged in research work at the hospital's laboratory and clinics. The Frauenthal Travel Scholarship, an award of $2,400 annually, was granted to Dr. M. S. Burman for study in European Clinics. Doctor Burman is now on his way to Europe.

Louis F. Rothschild, treasurer, reported that the hospital's assets are $3,273,000. During the year the hospital received $1,000,000 in bequests and contributions. Of that sum $750,000 was from the late Alfred M. Heinsheimer as a trust fund for the perpetual maintenance of the country home.

The total expenditures of the hospital for the year were about $750,000. Toward this sum the Federation for the Support of Jewish Philanthropic Societies contributed $146,000 and the United Hospital Fund $18,316.74. The deficit remaining after the use of these amounts and the earnings of the institution was made up by the board of directors.

J. J. Golub is director of the hospital.

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News of the Month

Interesting Papers and Discussions on Ontario Program

The three-day conference of the Ontario Hospital Association, Toronto, October 1, 2 and 3, promises many interesting papers and discussions by Canadian hospital executives.

The first-day session will be formally opened with an address of welcome by Mayor Wemp of Toronto. This will be followed by the report of the secretary-treasurer, Dr. F. W. Routley, after which R. H. Cameron, president of the association, will give the presidential address. The exhibits will also be officially opened at this session. The noon hour will be devoted to sectional luncheons and meetings at which time Dr. Malcolm T. MacEachern, director of hospital activities, American College of Surgeons, will speak.

Toronto General Will Give Tea

Only two papers will be presented in the afternoon. Frederick Lee, Stevens and Lee, architects, Toronto, will speak on "The Small Model Hospital," and Chester J. Decker, superintendent, Toronto General Hospital, will speak on "The Large Model Hospital." Following the afternoon session, a reception and tea will be held for the guests at the Toronto General Hospital. The new pavilion of the hospital will be open for inspection at this time.

The election of officers will open the second-day program. The following papers will also be presented: "The Relationship of the Mental Hospital to the General Hospital," Dr. C. B. Farrar, director, Toronto Psychiatric Hospital, and Dr. B. T. McGhie, director, Mental Health Clinics, Orillia, Ont. Discussion of these papers will be opened by Dr. C. M. Hincks, medical director, Canadian National Committee for Mental Hygiene.

Addresses by the Hon. Lincoln Goldie, provincial secretary, and H. M. Robbins, deputy provincial secretary, are scheduled for the afternoon, followed by a round table discussion led by Doctor MacEachern. The questions to be discussed will cover subjects relating to all three sections of the association. The annual banquet and ball will be held in the evening, with the Hon. Howard Ferguson, prime minister of Ontario, and Dr. G. Harvey Agnew, secretary, department of hospital service, Canadian Medical Association, listed as the principal speakers.

Third-Day Program to Be Varied

Scheduled to appear on the third-day program are A. J. Swanson, superintendent, Western Hospital, Toronto, with a paper, "Hospital Management From the Standpoint of the Superintendent," and Dr. W. J. Dobbie, superintendent, Toronto Hospital for Consumptives, Weston, Ont., with a paper, "Financial Responsibility for Schools for Nurses." A paper will also be given by a United Hospital Aids' member.

A general luncheon will be held at noon, at which the principal speaker will be Dr. A. K. Haywood, superintendent, Montreal General Hospital, Montreal. Reports of the various sections will be given in the afternoon as follows: for the trustees, Dr. John Ferguson, chairman; for the nurses, Miss B. L. Ellis, chairman; for the United Hospital Aids, Mrs. F. C. Bodley, secretary. Following papers on "The Medical Organization of the Large Hospital," by Dr. W. Langrill, superintendent, General Hospital, Hamilton, Ont., and "The Medical Organization of the Small Hospital," by Dr. W. Woolner, Ayr, Ont., president, Ontario Medical Association, the session will be formally adjourned.

Dr. A. K. Haywood Goes to Vancouver General

Dr. A. K. Haywood, superintendent, Montreal General Hospital, Montreal, Quebec, for the last dozen years, has accepted the superintendency of the Vancouver General Hospital, Vancouver, B. C., as successor to Dr. Frederick C. Bell, who has resigned because of ill health.

Doctor Haywood was assistant superintendent of Toronto General Hospital, Toronto, Ontario, prior to his

enlistment with the Canadian troops to serve in the World War. He served throughout the entire period of the war, returning after the Armistice to Montreal where he immediately took over the management of the Montreal General Hospital.

Doctor Haywood was at one time first vice-president of the American Hospital Association, and has always been active in the affairs of that organization. He is a member of the editorial board of THE MODERN HOSPITAL.

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$200,000 goal $207,000 secured

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News of the Month

New Building for Guggenheim Dental Clinic

The Murry and Leonie Guggenheim Dental Clinic, which was organized by Mr. and Mrs. Guggenheim for the purpose of establishing and maintaining dental clinics for children and conducting a comprehensive program of dental prophylaxis among the school children of New York City, has awarded to the Cauldwell and Wingate Company the contract for a central clinic building at 422-28 East Seventy-Second St., Manhattan. The clinic building, a six-story structure, is planned to accommodate seventy dental chairs, and is so arranged as to facilitate future expansion.

The principal operative clinics will occupy the two upper floors of the building. Separate floors have been assigned, respectively, to a school for oral hygienists, a department of oral surgery and a department of orthodontia. Among other features of the building are x-ray rooms, a biologic and histologic laboratory, a room for photography, a library, a board room, a room for public lectures on dental topics and a dental museum.

On the first floor there will be a large entrance hall, a bureau of registration, a social service office, rooms for the preliminary examination and classification of applicants, a check room for children's coats and a rest room for social workers and visiting school teachers.

For the school for oral hygienists there is to be a demonstration laboratory, locker room and lunch room. The general administrative offices of this clinic, which proposes eventually to establish a chain of dental clinics for children throughout the city, will be in the building. The plans for the Guggenheim Clinic were prepared by York and Sawyer, architects, New York City, in collaboration with Dr. S. S. Goldwater, consultant, New York City.

It is estimated that the central clinic when in full operation will be able to give more than 200,000 treatments in a single year. The chief aim of the clinic is to benefit the needy school children of the city. The clinic program has the full approval and cooperation of the board of education and of the department of health, and will in a sense represent the amplification and completion of a program of dental prophylaxis which the city authorities and public health experts generally have long favored. Special classes for the treatment of children of preschool age will also be established.

Indiana Rotary Clubs Finance New Unit for Children

A modern, new convalescent unit at the James Whitcomb Riley Hospital for Children, Indianapolis, Ind., is now definitely assured, according to a new announcement, and tentative plans have been made for the immediate construction of the first building. The new building will be financed by Indiana Rotary clubs and will be known as the Indiana Rotary Convalescent Home. It will be situated in a ten-acre tract provided by the hospital. The addition of the new unit to the hospital will increase the facilities of the present institution and will accommodate more than sixty patients.

The new unit, which will face the newly built Ball residence for nurses, will be two stories high and will provide four wards, with a nursery for infants on the second floor. Each floor will have two large sun rooms. Therapy rooms, classrooms, library, an auditorium and a dining room are other features included in the plans.

D. D. Test Retires After Forty Years With Pennsylvania Hospital

Daniel D. Test, superintendent, Pennsylvania Hospital, Philadelphia, is retiring after forty years of service with that historic institution. Mr. Test's resignation will take effect at the convenience of the managers.

In commenting on his retirement, Mr. Test writes: "It is interesting to look back over the changes that have taken place and to see the progress that has been made in the hospital world during these years.

"One of the great satisfactions of my life has been the hospital friendships I have had, and as I take up a less exacting life the retrospect of these associations will add to the pleasure to which I am looking forward."

Coming Meetings

American Association of Hospital Social Workers.
President, Edith M. Baker, Washington University Dispensary and Allied Hospitals, St. Louis.
Executive secretary, Helen Beckley, St. Christopher's Hospital, Philadelphia.
Next meeting, New Orleans, October 20-24.

American College of Surgeons.
President, Major General Merritte W. Ireland, Surgeon General, U. S. Army, Washington, D. C.
Director general, Dr. Franklin H. Martin, 40 East Erie Street, Chicago.
Next meeting, Philadelphia, October 13-17.

American Hospital Association.
President, Dr. Christopher G. Parnall, Rochester General Hospital, Rochester, N. Y.
Executive secretary, Dr. Bert W. Caldwell, 18 East Division Street, Chicago.
Next meeting, New Orleans, October 20-24.

American Occupational Therapy Association.
President, T. B. Kidner, 175 Fifth Avenue, New York City.
Secretary-treasurer, Mrs. Eleanor Clarke Slagle, 175 Fifth Avenue, New York City.
Next meeting, New Orleans, October 20-24.

American Protestant Hospital Association.
President, Luther G. Reynolds, Seattle General Hospital, Seattle, Wash.
Executive secretary, Dr. Frank C. English, Hyde Park, Station O., Cincinnati.
Next meeting, New Orleans, October 17-20.

American Public Health Association.
President, Dr. A. J. Chesley, St. Paul, Minn.
Executive secretary, Homer N. Calver, 370 Seventh Avenue, New York City.
Next meeting, Fort Worth, Texas, October 27-30.

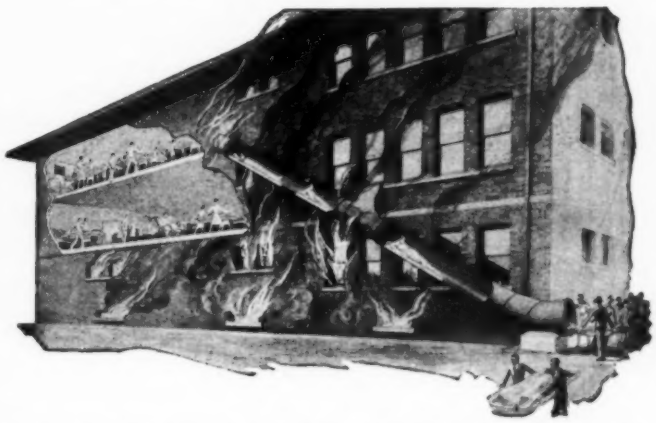
Association of Record Librarians of North America.
President, Mrs. Jessie Harned, Rochester General Hospital, Rochester, N. Y.
Corresponding secretary, Ruth T. Church, Boston City Hospital, Boston.
Next meeting, Philadelphia, October 13-18.

Children's Hospital Association of America.
President, Dr. Howard Childs Carpenter, 1805 Spruce Street, Philadelphia.
Secretary-treasurer, Bena M. Henderson, Milwaukee Children's Hospital, Milwaukee.
Next meeting, New Orleans, October 20-24.

Ontario Hospital Association.
President, R. H. Cameron, 62 Wells Hill, Toronto.
Secretary-treasurer, Dr. F. W. Routley, Medical Arts Building, Toronto.
Next meeting, Toronto, October 1-3.

Fire Has No Mercy for Your Helpless Patients

Visit our exhibit at Booth No. 11, American Hospital Convention, New Orleans, October 20th to 24th, 1930



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Terrible fires will have no mercy on your helpless, bed-ridden patients, but you can INSURE THEIR SAFETY by installing POTTER TUBULAR SLIDE FIRE ESCAPES. With Potter Escapes, the patients—wrapped in their own bed clothes—slide to safety on their own mattresses from 2nd, 3rd or 4th floors without harmful exposure to smoke, gases or stormy weather. In 1929 the long list of Potter Equipped Hospitals was increased by installations on 21 important hospitals in 13 states.

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Personals

DR. W. C. SCHROEDER, formerly superintendent, New York Municipal Sanatorium, Otisville, N. Y., is the new head of the Delaware County Tuberculosis Hospital, Delhi, N. Y.

MARIETTA D. BARNABY, superintendent, Henry Heywood Memorial Hospital, Gardner, Mass., has resigned. MARTHA WALLACE, formerly superintendent, Waldo County General Hospital, Belfast, Me., is her successor.

MARIE REDMAN is the new superintendent of Robinson Hospital, Robinson, Ill.

BESSIE BLAKE has been appointed superintendent, Pawhuska Municipal Hospital, Pawhuska, Okla. Prior to her recent appointment MISS BLAKE was superintendent of Hominy City Hospital, Hominy City, Okla.

MARGARET E. ORR is the new superintendent of the Shriners' Hospital for Crippled Children, Montreal, Quebec.

DR. J. A. EDWARD has accepted the post of superintendent, State Sanatorium, Oakdale, Iowa. DOCTOR EDWARD was formerly connected with the State Institution for the Feeble-Minded, Glenwood, Iowa.

VIVIAN NICOLAI has been named superintendent, Oconto County and City Hospital, Oconto, Wis. MRS. NICOLAI was formerly connected with St. Mary's Hospital, Milwaukee.

DR. ROLAND H. CRANFORD, for several years owner and operator of the Laurel General Hospital, Laurel, Miss., has returned to his former post as superintendent of the South Mississippi Charity Hospital, Laurel, succeeding DR. R. H. FOSTER.

DR. HOWARD M. SMITH, for more than four years superintendent of the old City Hospital and its successor, General Hospital No. 2, Kansas City, Mo., resigned recently. DR. D. M. MILLER will succeed DOCTOR SMITH.

DAN TRANER, for six years assistant to E. I. ERICKSON, superintendent, Augustana Hospital, Chicago, is the new superintendent of the Swedish American Hospital, Rockford, Ill.

C. W. FORDE, JR., superintendent, Longview Memorial Hospital, Longview, Wash., since it was established in 1926, has resigned. PAUL MITTEN has been named to succeed MR. FORDE.

DR. WALTER E. LIST, superintendent of Minneapolis General Hospital, Minneapolis, Minn., for the past ten years, is the new head of Jewish Hospital, Cincinnati.

AGNES C. SHORE, formerly superintendent of Montgomery Hospital, Norristown, Pa., has been named director of nurses at Coaldale State Hospital, Coaldale, Pa.

EMMA LEACH is the new superintendent of Owatonna City Hospital, Owatonna, Minn. Before her appointment MISS LEACH was obstetrical supervisor at Fairview Hospital, Minneapolis, Minn.

LUVERNE E. HERST is superintendent of Pennock Hospital, Hastings, Mich., having gone there from Teachers College, Columbia University, where she took a course in the nursing department.

DR. MARVIN F. HAYGOOD succeeds DR. EDSON W. GLIDDEN II as superintendent, State Tuberculosis Sanatorium, Alto, Ga. DOCTOR HAYGOOD was formerly city physician, Knoxville, Tenn.

ETHEL M. WILLCUTT, who has been connected with the Hill Crest Surgical Hospital, Minneapolis, Minn., since 1919, has recently been appointed superintendent of the institution.

EMMA DALE WEBB, superintendent, Roxbury Hospital, Roxbury, Mass., has been granted a leave of absence. She is succeeded by MILDRED E. GORMAN, R.N.

DR. WINTHROP ADAMS, medical director, Veterans' Bureau, has been released from his present position at his own request and has been assigned to duty as medical officer in charge of the Veterans' Neuropsychiatric Hospital, Bedford, Mass. He is succeeded in the bureau by DR. CHARLES M. GRIFFITH, executive officer of the bureau's medical service.

FRANCES REE LINDSEY is the newly appointed superintendent of King's Daughters Hospital, Brookhaven, Miss.

FREADA K. BUTTS has been named superintendent of Emma L. Bixby Hospital, Adrian, Mich.

THELMA BAKER has recently been elected superintendent of Hover Hospital, Sealy, Tex.

F. W. HOOVER, superintendent, Alliance City Hospital, Alliance, Ohio, succeeds JOHN MANNIX as head of Elyria Memorial Hospital, Elyria, Ohio. MR. MANNIX is now assistant director, University Hospitals, Cleveland, Ohio.

CHARLES H. DABBS, for the last eighteen months superintendent, Grace Hospital, New Haven, Conn., has resigned.

ANTOINETTE LIGHT, R.N., is now serving in a temporary capacity as superintendent of the W. A. Foote Hospital, Jackson, Mich.

DR. GEORGE L. WALLACE, superintendent, Wrentham State School, Wrentham, Mass., died recently. RAYMOND A. KINMOUTH is now acting as superintendent.

DR. R. W. BROWNE is the new superintendent, United States Veterans' Bureau Hospital, Walla Walla, Wash.

MRS. R. F. COURTNEY, R.N., is the newly appointed superintendent of Red Cross Hospital, Oak Creek, Colo.

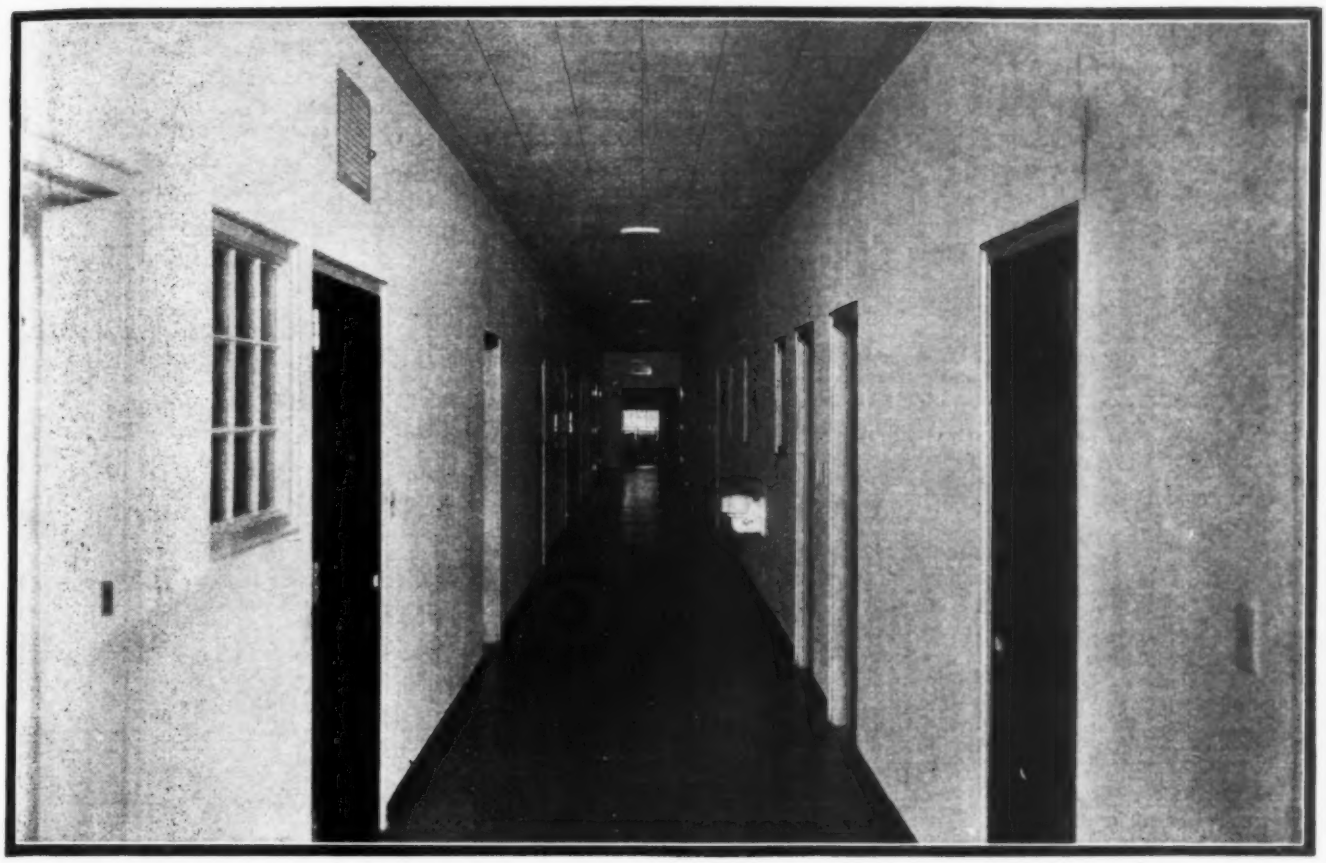
ELIZABETH STEWART, R.N., is now serving Union Hospital, Elkton, Md., in the capacity of superintendent.

MARY PROWSE, formerly assistant to the superintendent, Sloane Hospital for Women, New York City, has been appointed assistant to the executive vice-president, Presbyterian Hospital, in charge of Sloane Hospital administration.

L. A. JOHNSON, Trinity Lutheran Hospital, Kansas City, Mo., has succeeded the REV. A. NORRBOM as superintendent, Iowa Lutheran Hospital, Des Moines, Iowa.

CAROL MARTIN, superintendent, Community Hospital, Glasgow, Ky., has resigned to go to Milwaukee where she will do special work as a librarian.

A MESSAGE TO HOSPITAL OFFICIALS FROM
THE UNITED STATES GYPSUM COMPANY



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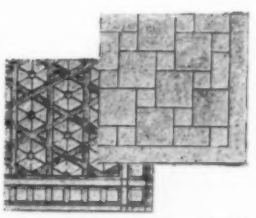

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NURSING AND THE HOSPITAL

Conducted by M. HELENA MCMILLAN, R.N.,
Director, School of Nursing, Presbyterian Hospital, Chicago

Providing a Cultural Background for the Nurse

By MARGARET MOSIMAN, Ph.B.
Assistant Principal, School of Nursing, Ravenswood Hospital, Chicago

A LARGE amount of the criticism directed against nurses is not a criticism of their professional skill but of their lack of tact, social sense, and humanitarianism. Even a cursory reading of certain sections of the book "Nurses, Patients and Pocketbooks," published by the Committee on the Grading of Nursing Schools, will reveal that the fault lies not so much with the curriculum of the training school as with its failure properly to prepare the young nurse for a continued interest in society. Many of the qualities that a woman needs in human service must be implanted in her at an early age, but much shaping of character and personality is possible during the three years of a nurse's training.

A. E. Zimmern thinks of education as a "contact between all those, whoever and wherever they may be, who hold fast to the belief that the true purpose of education for young and old is the understanding and enjoyment of life, and that the uneducated man is not he who cannot read or write or count or spell, but he who walks unseeing and unhearing, unaccompanied and unhappy, through the busy streets and glorious open spaces of life's pilgrimage." John Erskine has said that true education comes from human contacts.

Nurses Need to Know More Than Nursing

A broader education must give the nurse greater participation in avocational and cultural interests. Conviction and knowledge are needed in nursing, but so are courtesy and kindliness. Nurses need to develop social skill so that when they are in a group they will not always talk shop. The promiscuous use of hospital language and the lack of social success may be due to the inadequate preparation of the nurse for contacts outside her field. Frederick J. E. Woodbridge in his book "The Son of Apollo" declares, "The school asks for children better trained at home and the home asks for children better trained at school." To-day the same plea comes from both nursing schools and the public. The schools are asking for students better educated before admittance, while the public is censuring the training schools for not giving nurses a broader education.

The technical education of the nurse is in most cases finely developed by the present curriculum. But education itself covers so much more than skill in carrying out nursing procedure. Informal education should develop the powers of the average member of the class. We are prone to recognize a few capable outstanding individuals and give them all of the opportunities for leadership and class honors. The shy undeveloped person is overlooked. Informal education should show the student her place as a useful member of society.

How Mexico Teaches Its Children

Saenz, a Mexican leader in education, in describing the rural schools in Mexico, points out how individual the work is, although there are many group activities. The children of each school have a garden and an orchard; they keep bees; they may plant mulberry trees or start a silkworm colony. School is a real community where raising a chicken is as important as learning a poem. The purpose of the school is not only that of technical preparation of the pupil, but of contributing toward social organization.

We preach education to the nurse, telling her that a better education means a better salary and more chances for advancement. We should make it clear that education will make her life richer and happier in other than material ways. A college education should not be considered as an end in itself. A nurse with a college degree yet without executive or teaching ability does not belong in the administrative or teaching field, but she can be a valuable asset to the nursing profession by demonstrating to the public that bedside nursing can be an art. Many of the finest women in nursing do not come in direct contact with the patient.

Generosity, kindness, self-denial and industry are the traits that inspire friendship between nurses and patients. Gentleness, quietness and self-possession are as requisite for a nurse as for other well mannered members of society. Training schools must in the future stress the importance of manners as well as of technical skill if their graduates are to take their place among the truly educated. The immediate reaction to a plea for a broader education is usually, first, the question of

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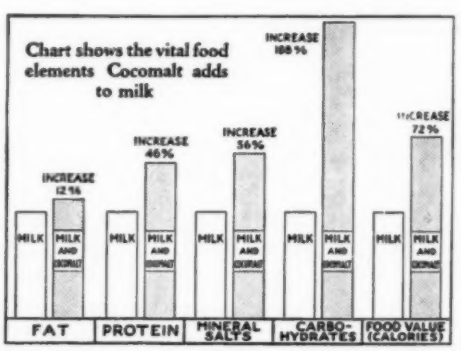

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financial cost and second and of equal importance in the minds of nursing administrators, the present overcrowded condition of the curriculum.

Because of the expense, many persons protest when approached on the subject of broader education of the nurse. It is being realized, however, that an investment in some of the cultural phases of education for a nurse will give excellent returns. Naturally such a training costs money, but it seems absurd to consider education without expense. As the smaller hospitals begin to replace their student schools with graduate nurses, this financial protest will decrease, for large schools can afford a more elastic budget.

Is Nursing Education Poorly Balanced?

At present, in nursing education, much stress is being placed on individual technical instruction. Should not as much emphasis be placed on developing personalities and inclinations that might be nourished under skillful intelligent direction? Few schools can afford a social hostess, but tea served one afternoon a week, each time with a different group of student nurses acting as hostesses, develops social poise. A library well stocked with books not limited to technical subjects is essential for any school. Books on fiction, biography, travel, history, art and poetry should be available so that the student nurse may become familiar with modern literature as well as with old favorites. Current magazines also have their place in a nurses' library.

City hospitals have access to art galleries and museums. The herding of a group of students into the gallery on a rapid trip of inspection is of little value. But if before the trip the student is required to read a standard book on appreciation of even one period of art on exhibition in the gallery and must on her return from the trip write a few paragraphs on even two of the pictures seen, a start has been made toward a cultural awakening. One school has included in its course a series of art lectures by an instructor in a neighboring museum, with required reading and several trips to the galleries as part of the course.

Another school with an extensive social service system sends each student while she is still a preliminary to spend a day with a social service worker, making calls in patients' homes. Still another school gives a course in social science, supplemented by trips to settlement houses, orphanages, the city bridewell, almshouses, and when possible, to the juvenile court.

How Social Training Can Be Introduced

The present curriculum does make additional courses difficult, but the situation is not hopeless. Most progressive schools now include training in physical education and glee club work. Not all students take part in these activities at all times. The course of appreciation in art may be given to seniors who could for a time at least be excused from physical education and singing. The classes in social service should come in the senior year after the nurse has had psychology and sociology. At present the different nursing classes give several parties a year for themselves and usually at least one for the graduating class. The members will not rebel if informal instruction is offered at these parties. I am not advocating the transfer of responsibility for planning the parties from the class to one of the faculty, but if the class works with a member of the faculty who is socially trained and if the type of entertainments during the year can be varied, much will be accomplished.

For these parties to be of benefit, the students must have adequate social teaching and supervision. The first requirement will be an accepted book of etiquette in the nursing library. Second, the dietitian can arrange to introduce in her classes the question of table arrangement, as a part of the art of arranging a tray esthetically. The third requirement is recognition and stressing by members of the faculty of the importance of good manners in daily living. Manners and education have for years been combined in colleges and boarding schools. In "Nurses, Patients and Pocketbooks," patients stressed such points as "I liked my private nurse because of her gentleness, her patience, her sympathy and her ladylike manners. Of course she was efficient, but efficiency does not always carry with it popularity." "Would have liked her better if she had a more pleasing personality and a more general education."

Since nurses have been successful in achieving better technical preparation, we are ready to undertake the next step, that of promoting better social background among our students. We often become discouraged when nurses resist efforts to give them cultural advantages. Nursing is in a period of transition. Some people have always objected strenuously to doing anything but making a living. No one can help these people, but one thing modern psychology has taught is that no one knows the possibilities of any other individual.

If the training schools are successfully to educate the nurse, they must consider extra-curricular activities as important to her technical preparations. The assurance that a student has had four years of high school or even some preparatory college education does not absolve the training school from an effort to bring out hidden capabilities and to foster ambition. In the past, many capable women superintendents have done much in helping students develop individual personalities. With the present mass production of nursing students, this personal contact has been more or less eliminated, and one of the major problems that confronts the training schools of to-day is the individual development of the character of the nurse.

Knowledge the Student Nurse Should Have Before Her Graduation

Student nurses should have a practical knowledge of bacteriology, epidemiology and public health before they are graduated, the *American Journal of Public Health* emphasizes in a short article.

"Too often," the article points out, "the nurses' instructors are technicians or members of the hospital staff or staff nurses selected because of their inadaptability for other duties. It is perfectly true that prescribed courses are mentioned in the curriculum for hospital nurses, but it is not infrequent that the course in bacteriology, at least, is given without the student's obtaining actual laboratory experience.

"It is likewise true that hospital nurses are not intended to be bacteriologists but their varied duties are such that sterile technique at the bedside and in the operating room is dependent upon existing bacteriologic flora and a workable knowledge of the reasons for possible contamination and the contaminants is necessary. Just as necessary are the fundamentals of the epidemiology and public health measures to be used to combat disease.

"Superintendents of hospitals should carefully scrutinize such instruction in order that the graduate nurses shall have adequate familiarity with laboratory technique and public health procedures."

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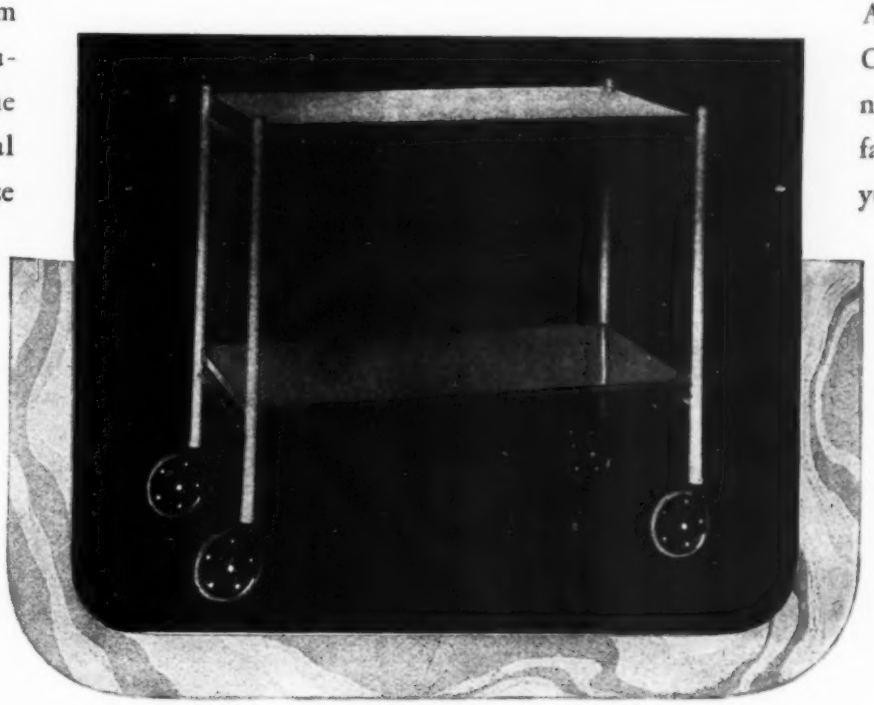

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DIETETICS AND INSTITUTIONAL FOOD SERVICE

Conducted by ANNA E. BOLLER, Central Free Dispensary at Rush Medical College, Chicago

Meeting Hospital Requirements in College Dietetics Courses

By ROSE T. BAKER
Assistant Professor of Home Economics, Drexel Institute, Philadelphia

THE modern hospital is a comparatively new organization, developed, it is true, from the old type but now giving all types of service to all classes of individuals. The hospital was originally for the poor; later, private rooms were added for the rich. To-day hospital service has become a necessity for all classes.

Side by side with the growth of the hospital organization has come the development of the dietary service department. The old food service organization that adequately met the needs of yesterday has been supplanted by a highly specialized, highly scientific food organization that is now utilized in the treatment of many of the modern diseases. The food expert is therefore becoming a necessity.

But how is the hospital going to meet these new demands for trained women? Colleges that offer the institutional economics course must of necessity play an important rôle in the training of these dietitians. But what the college expects of the hospital must be what the student should acquire to become a successful dietitian. Because all facts cannot be learned in four or five years of specialized schooling, the development of the dietitian is complex.

Dietitians fall into two classes—the working or assistant dietitian and the administrative dietitian. Let us consider the requirements of each class. It will then be possible for us to determine how to divide the responsibility of specialized training for student dietitians between the college and the hospital.

The working dietitian, usually being a younger member of the group, must assume responsibilities within any institution. Her knowledge must accordingly be definite on the following subjects:

1. Any profession will be as big as the persons who go into it, and the individual must regulate her conduct accordingly.
2. In building for the future, a strict professional attitude toward those in authority, toward colleagues and toward the institution's employees, must be maintained.
3. A thorough understanding of the hospital's code of ethics.
4. The organization of the food department.
5. Fundamentals of buying supplies, foods and equipment that will be economically sound, scientific and at all times practical.
6. To operate a dietary department and give pleasing food service to all types of patients, the nurses, the doctors, the staff and administrative officers and the employees.
7. Social service food work and its place in the hospital and community.
8. An appreciation of an efficiency engineer's job, including equipment, labor saving devices and human frailities and limitations.
9. To teach scientifically and practically all the fundamentals necessary to the individual in any hospital organization, thereby obtaining maximum results from nurses, interns, dietitians and employees.
10. The interpretation of scientific food facts and body requirements for all types of individuals, both normal and abnormal.

The Administrative Dietitian

The administrative dietitian therefore must have in mind all of the foregoing facts and in addition she must develop an ability and a power of appreciation that will enable her to carry her scientific knowledge to a high point of efficiency. All of these developments will naturally be the result of years of hard work and experience. Only by such efficient administration can she develop for the hospital organization, an educational, economically sound and strong food department.

The responsibility, therefore, for the development of any individual who wishes to become an expert dietitian falls definitely upon society's institutions of training such as the home, the public school, the college and the hospital. Without doubt the individual with a well balanced home and school training and with native ability has the best opportunity to develop a pleasing personality and to cultivate common sense. With these fundamentals the college and the hospital, by giving specific knowledge and training, should produce the ideal working dietitian. It behooves the college to give the individual those fundamentals that are necessary for her life work.

What subjects are essential in a college dietetics

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2. *To serve fruit juices*

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The plain bowl (figure 1) makes an excellent container to serve half an orange, grape fruit, etc. Filled with ice and with the three pronged glass holder, fruit juices are kept deliciously cool (figure 2). The bowl, with cover (figure 3) makes an ideal hot cereal or broth bowl; while the collar and either the blown glass or china liners turn this into a perfect dish for serving eggs, sea food or such desserts as ice cream, or for hot and cold bouillons (figures 4 and 5).

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course? The first two years' study should be cultural so that the student may acquire a broad outlook. The last two years should include special or major courses in the following: psychology; food chemistry; physiology; dietetics; food preparation; food purchases; business ethics; diet and disease; child care and development; special courses in nutrition work; sociology; education; public speaking. Other courses may be elected to suit the individual's needs.

Personality Is an Important Factor

With all this training there must be developed within each person a keen insight into human nature, an appreciation of and a sympathy for other people and, above all, a large amount of tact and common sense that will last through life no matter what problems may appear. Common and scientific honesty with ourselves and with our associates is essential. Personality, therefore, becomes an important factor in this training. While the college must give the fundamental knowledge the student should also acquire ability in using this knowledge. Many of the abilities, however, must be acquired through further study.

After the years of home and school training, the hospital then must assume the responsibility of giving the individual further training in highly specialized technical work.

The hospital's training for these student dietitians naturally falls into five classes: (1) the development in the young, scientifically trained mind of an appreciation for all the factors developed in the hospital code of ethics; (2) standard courses for these students in the specialized fields developed with the various hospital departments; (3) manipulation of and acquaintance with all types of diets used by the various medical authorities in the field; (4) an appreciation of the patient's point of view that a humanitarianism for all individuals within the group may be developed; (5) an appreciation of and a longing for a stronger professional attitude and a higher type of personality and a willingness to shoulder the responsibilities of service to all mankind.

If we consider in detail these five points, there are many adjustments that must be made in the student dietitian's life that the hospital must in some way accomplish in the short student training course. Because the hospital code of ethics is quite military in character, great care should be given to its finest and highest interpretation for this young trained worker. Then, too, the dietitian comes in contact with so many types of highly specialized workers, such as doctors and nurses, that she must be taught to have a keen sense of and appreciation for the services such workers are rendering to humanity. The student must therefore be taught to be human but dignified at all times in all of her professional contacts.

Dietitian's Duties Are Manifold

In the second place, the course must be given in the specialized fields of study as follows: diets and their adaptation to any and all diseases; administration of a complicated department where excellent service must be standardized not only for all normal but for abnormal individuals; appreciation of the work that is carried on in all of the other departments within the hospital.

The young dietitian must be taught that each hospital is an individuality and that rules apply there that may be rigidly enforced; yet when she goes into another organization she may find other rules that are just as correct and workable. All of the diets prescribed by specialists should be studied with relation to their use in the treatment of a given disease and facility in the preparation of diets should be developed.

Since most student dietitians have not had experience with the workaday world, they must be taught that the abnormal individual's viewpoints are quite different from the average and that service to the patient must be the sole aim of each individual in the entire hospital. There must be cooperation with all departments in serving the patient so that he may be sent back to the community a better citizen for having been in the hospital even a short time.

In the small hospital the food department by itself cannot support such a trained person; hence the dietitian of to-day must be trained in other household duties. She must be a housekeeper since she must often assume the entire supervision of the laundry, of the cleaning and of other tasks that must necessarily be carried on within the hospital. Doing the work of a household equipment engineer may of necessity come within the realm of this scientifically trained individual. The dietitian, therefore, becomes a real household engineer, handling all of the food units and all of the housekeeping departments, managing the laundry and superintending the business of all the departments within her jurisdiction.

In other words, the dietitian's position is complicated and difficult, and is one that must be handled by a well trained individual if the hospital is to maintain adequate service for the general public. It is therefore toward this end that the college is giving its dietetics courses. Concerning these courses the hospital must assume definite responsibilities if it is to give these young students the necessary requirements for their chosen life work.

On the other hand, the dietitian, to be successful, must not only know all details of her own job but she must train a person to fill her place efficiently if she should leave. Above all, she must acquire the ability to appreciate other positions within the organization.

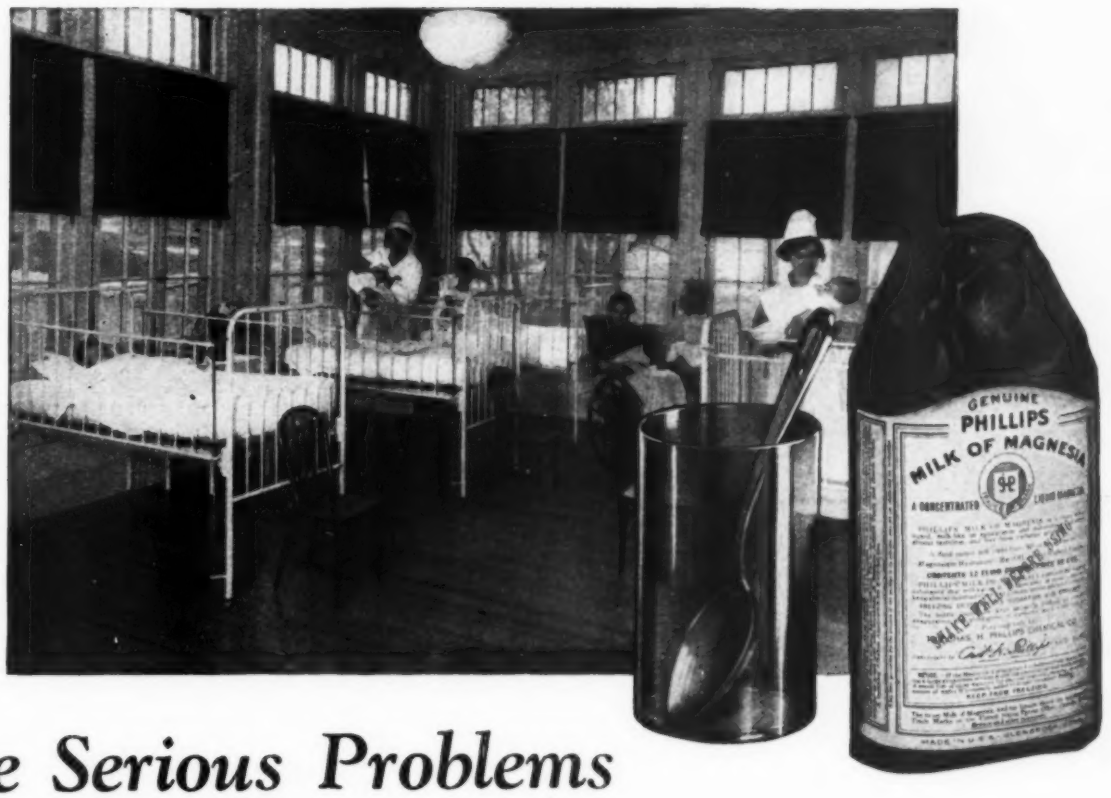
Dietetic Information on New Fruits Is Now Available

Dietetic information on many fruits, including many comparatively new to American tables, is now available, according to a statement issued by the Department of Agriculture. The information is presented in the form of newly prepared tables giving the proximate chemical composition of fresh fruits and fruit juices.

In recent years such former fruit novelties as Japanese persimmons, avocados, loganberries, mangos, papayas, and many other interesting and delicious new fruits have become generally available on the market in their season. As soon as a new fruit becomes common it is desirable to know how much sugar, acid and other chemical constituents it contains. Doctors and dietitians need such data if they are to include it in their diet lists.

The bureau of home economics recently issued tables giving proximate chemical composition of fresh fruits and fruit juices. Averages for new and unusual fruits and for apples, cherries, peaches and all the familiar kinds are shown in terms of carbohydrates, calories and other chemical units.

Separate figures are given for Summer, Fall and Winter apples, sweet and sour cherries, and other varieties or types of a fruit that differ markedly in their composition. Circular No. 50 entitled "Proximate Composition of Fresh Fruits" is distributed free by the United States Department of Agriculture, Washington, D. C.



In the Serious Problems of Childhood . . .

RECURRENT vomiting and the diarrhoeas of childhood can be effectively counteracted with "Phillips' Milk of Magnesia."

Where ordinary cow's milk forms an excess of curd, the antacid properties of "Phillips' Milk of Magnesia" are supplemented by its value as an eliminant of curds which have passed too far along the intestinal track to be absorbed.

In hyperacid states, both in the child and in the adult, "Phillips' Milk of Magnesia" holds a premier place among the long list of available antacids. It is prescribed by physicians throughout the world because children take it easily, and it gives best results without unpleasant after-effects.

"Phillips' Milk of Magnesia" neutralizes about three times as much acid as a saturated solution of sodium bicarbonate and nearly fifty times as much as lime water. Further, it has the added merit of being a laxative, a quality of importance here since constipation is often the underlying cause of acidosis.

Hospitals are advised to insist upon "Phillips' Milk of Magnesia" which has carried our registered trade mark for over fifty years. Obtainable from druggists and supply houses everywhere in 4-ounce (25c bottles), 12-ounce (50c bottles) and 3-pint hospital size.

PHILLIPS' Milk of Magnesia

THE CHAS. H. PHILLIPS CHEMICAL CO. • • • NEW YORK

HOSPITAL EQUIPMENT AND OPERATION

With Special Reference to Laundry, Kitchen and Housekeeping Problems

Conducted by C. W. MUNGER, M.D., Director, Grasslands Hospital, Valhalla, N. Y.

How to Ensure Efficient Operation of the Maintenance Department

By JOHN R. MANNIX
Assistant Director, University Hospitals, Cleveland

THE question of hospital maintenance should be given consideration at the time the building is planned. Hospital buildings and equipment are subject to constant hard usage, and the type of work to be done requires that all facilities function smoothly so that service to the patient may be uninterrupted. In planning hospitals to-day more consideration is being given to the problem of operation and the majority of hospitals constructed during the past ten years are well planned. However, many hospital administrators are confronted with the problem of managing old or improperly planned buildings.

Let us consider what is necessary for efficient operation of a hospital maintenance department. There seem to be three factors: first, a well trained department head and adequate personnel; second, sufficient budget allowance and provision of facilities for work, such as shops and their equipment; third, an operating set-up that contemplates constant supervision and inspection with a system of daily repair requisitions.

The supervision of the heat, light and power plant and the maintenance division should be assigned to one department head, preferably a licensed engineer. He must direct the activities of engineers, firemen, oilers, carpenters, painters, plumbers, electricians, often of plasterers and masons, and therefore must have a broad experience, ingenuity and resourcefulness. He must, further, be able to direct a force of men.

Each hospital has a vast amount of both regular and highly specialized mechanical equipment that must be regularly inspected and repaired. This requires a working knowledge on the part of the maintenance head of all mechanical equipment, including laundry, refrigerating, plumbing, electrical, x-ray and laboratory. The maintenance head must be able to judge when it is economical to repair a piece of equipment and when it will be better to replace it.

It will not be easy to obtain a person who possesses these qualifications. Such a man can best be secured through the hospital, hotel or building maintenance field and he should be paid a salary commensurate with his earning capacity in other fields. There is scarcely a limit to the amount the right man will save. Poor handling of the maintenance problem will cost the hospital dearly in

TABLE II—MAINTENANCE DEPARTMENT BUDGETS

Salary Budget	*100 Beds*	*200 Beds*	*300 Beds*	*400 Beds*
Maintenance chief (part time)	$1,200.00	$1,500.00	$1,800.00	$2,100.00
General repair man	1,800.00	1,800.00	1,800.00	2,400.00
Carpenter	1,500.00	1,500.00	1,500.00	3,000.00 (2)
Painter	1,500.00	3,000.00 (2)	4,500.00 (3)	4,500.00 (3)
Plumber			1,500.00	1,500.00
Electrician				1,500.00
Workman		1,200.00	1,200.00	1,200.00
Groundkeeper	1,200.00	1,200.00	1,200.00	1,200.00
Total	$7,200.00	$10,200.00	$13,500.00	$17,400.00
Total Budget				
Salaries	$7,200.00	$10,200.00	$13,500.00	$17,400.00
Supplies	3,600.00	5,400.00	7,200.00	9,000.00
Grounds supplies	120.00	200.00	300.00	400.00
Replacements	2,400.00	3,600.00	5,000.00	6,500.00
Miscellaneous	100.00	200.00	200.00	300.00
Total	$13,420.00	$19,600.00	$26,200.00	$33,600.00

This Hospital Saved $1500 a Month with ATHEY WEATHERSTRIP

This is only one of many similar instances. Read carefully the letter from the St. Louis Sanitarium; it proves to you that Athey weatherstripping, with its cloth-to-metal contact, is the most efficient method of keeping out drafts, increasing comfort, assuring warmth and reducing fuel bills.

Note from sectional view below how impossible it is for cold air to enter an "Atheyized" window.

Department of Public Welfare
CITY OF ST. LOUIS

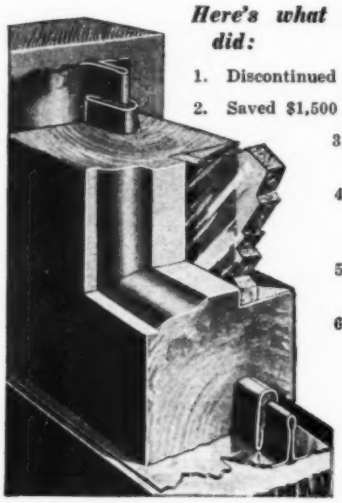
February 15, 1929.

The Athey Company,
928 Chemical Building,
St. Louis, Mo.
Gentlemen:—

You will perhaps be glad to know that through the weather-stripping job handled by your people at the City Sanitarium recently, we were able to discontinue the use of one 350 horse-power boiler, a saving to the City of about $1500.00 a month in coal. We were also able to cancel an order for about $2000.00 worth of blankets, which had been requisitioned for use during the present winter.

Feeling that this information would be of interest to you, we gladly submit it.

Yours very truly,
A. L. Dahlberg
Director of Public Welfare.



Here's what Athey weatherstripping did:

1. Discontinued the use of a 350 H.P. boiler.
2. Saved $1,500 a month in fuel.
3. Cancelled an order for $2,000 worth of blankets.
4. Reduced ashes and extra ash and fuel handling costs.
5. Kept out dust, smoke, dirt and gases.
6. Quickly saved entire cost of installation and now pays a regular profit thru its economical operation.

It pays to put "Athey" on your payroll.

Write today for free catalog and price list. It will pay you to investigate and get the facts of this better method.

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Alexian Bros. Hospital, Chicago, Ill.
Mount Sinai Hospital, Chicago, Ill.
St. Joseph's Hospital, Chicago, Ill.
Illinois Central Hospital, Chicago, Ill.
Austin Hospital, Chicago, Ill.
Mount Sinai Hospital, Cleveland, Ohio
St. Elizabeth's Hospital, Appleton, Wis.
Nurses Home, Ogden, Utah
Lutheran's Old Peoples Home, Milwaukee, Wis.
St. Joseph's Hospital, Milwaukee, Wis.
St. Luke's Hospital, New York City.
Midway Hospital, St. Paul, Minn.
Mayo Clinic, Rochester, Minn.
Recreation Bldg. Marine Hospital, Aspinwall, Pa.
Truesdell Hospital, Leominster, Mass.
Home of the Friendless, Lockport, N. Y.
Lutheran Hospital, Columbus, Miss.
Ft. Saunders Hospital, Knoxville, Tenn.
Multonomah County Hospital, Portland, Ore.
Notre Dame Hospital, Montreal, Canada
San Luis Obisto Hospital, San Luis, Obisto, Calif.

ATHEY WINDOW SHADES FOR HOSPITALS

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Hospitals are enthusiastic in proclaiming ATHEY Shades a great relief from eyestrain due to glare.

In cold weather the shades may be so arranged as to protect the patient from direct draft from a partly open window. Being eyeletted and sliding on taut wires, they cannot flap and become torn or soiled. They may be adjusted instantly to shade any part of the window. In hot weather the heat from the sun beating on the shade and window may be excluded from the room by lowering the window a few inches from the top and raising the shade a few inches from the bottom. This lowers the room temperature several degrees and eliminates the need of awnings.

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No latches or springs to slip, stick or break. Made in any desired length, and in widths up to 16 ft. Also furnished for sunbursts for circle head, segmental or Gothic windows, and for skylights.

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Write today for free catalog of Athey Shades and Athey Weatherstrips, a two-fold combination that is saving money in scores of modern hospitals.

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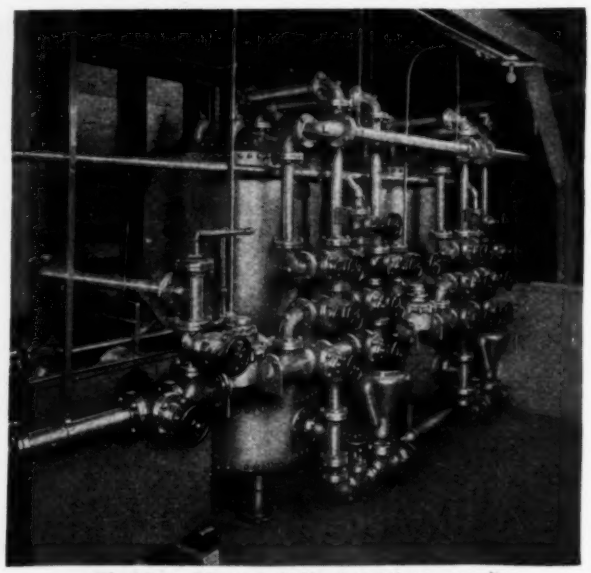

The Merritt Hospital, Oakland, Calif., is equipped with a Crane-Warlo water softener.

In practically every department The Merritt Hospital reports profits from a Crane-Warlo Water Softener

In Oakland's Merritt Hospital, the expenses of operating the laundry have been substantially reduced. The quality of work has been improved and fabrics are lasting longer. The superintendent attributes this to the Crane-Warlo Water Softener they have installed.

The laundry is not the only department which has benefitted by use of soft water. In the kitchen, foods are tastier and dish washing is done in less time . . . plumbing fixtures and instruments are more easily and more thoroughly cleaned . . . waste piping is freeing itself of accumulated soap and grease . . . skin irritations in the nursery are exceptional and bed-sore patients are few.

This briefly summarizes what has happened in the Merritt Hospital since a Crane-Warlo Water Softener was installed. The same benefits are awaiting any hospital that puts one in.

Call a Crane man or drop into the Crane Exhibit Rooms to determine how little it costs to make such an installation and how very little to operate it.

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terms of money, as well as in lack of efficient equipment.

Table I details the duties of the employees of the maintenance department. Smaller hospitals will, of course, combine several of the positions listed. Every hospital should have a schedule of positions for all personnel and the duties of each position, with the particular requirements of a given institution, should be outlined. The house orders should be issued by the superintendent to the department head and each employee, at the time of employment, should be given a typewritten list of his duties. Such a system saves the department head much time and allows no misunderstanding as to which employee is to handle a given job. In assigning these duties, it is well to note the hours on duty and the allotted vacation period for the employees.

Table I is an outline from which house orders of the duties of the maintenance force of individual hospitals may be drawn. Such a schedule cannot be employed uni-

TABLE I—DUTIES OF THE MAINTENANCE FORCE

Maintenance Chief:
Make a complete inspection of all buildings and equipment on Tuesdays and Fridays of each week, originating requisitions for all repairs and changes that are deemed advisable.
Supervise the work of all members of the maintenance department, checking all requisitions each day and allotting each requisition to the proper workman with necessary instructions.
Inspect all repairs after mechanics have finished.
Originate purchase and stores requisitions for necessary supplies and submit to superintendent for approval.

General Repair Man:
Relieve the maintenance chief when he is off duty.
Lubricate and inspect laundry machinery daily.
Lubricate and inspect elevator machinery every two weeks.
Inspect refrigeration equipment daily and lubricate monthly.
Inspect kitchen equipment daily.
Inspect ventilating equipment daily.
Make all repairs as outlined by chief maintenance man, such as repair of door closers and checks, locks, beds, wheel chairs, trucks and other metal and heavy duty equipment.

Carpenter:
Make all repairs of woodwork and cabinets in the hospital, as outlined by chief maintenance man.
Install and replace all window glass necessary.
Repair all upholstery.
Repair all window shades.

Painter:
Take care of all painting and refinishing as outlined. It is important that buildings and equipment be repainted or refinished immediately, when necessary, following repair by other mechanics.
Replaster small crevices in walls, when necessary.

Plumber:
Make necessary repairs to plumbing and steam equipment.
Reseat all faucets, when necessary.

Electrician:
Replace burned out electric lamps and fuses.
Inspect x-ray, physiotherapy and other electrical
Repair all electrical equipment as needed.

Workman:
Assist mechanics, as advised by chief maintenance man.
Assist in moving and setting up.
Assist in installing and removing window screens and awnings.

Groundkeeper:
Roll and seed lawn in the Spring.
Mow and trim lawn regularly.
Prune all shrubbery.
Remove snow from walk and drives during winter.
Remove débris from grounds each morning.
Clean walks, outer steps and porch and roadway regularly.

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LOHADOR
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The latest development of portable liquid soap service. Large capacity bowl - vitreous finish (easily kept clean) - no exposed working parts to collect and hold dirt - bowl swings in complete arc on stand so that several people may use it simultaneously - flow regulator - sure action pump - always ready to serve you. The Midland Lohador Liquid Soap Dispenser is standard in hundreds of the most modern hospitals.

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MIDLAND Liquid Soaps are made of the finest raw materials the market affords. After careful processing each batch is filtered and aged. The users of Midland Liquid Hospital Soaps are assured of a uniform product of extra high soap content.

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BABY TALLY CHART HOLDERS
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Puts the lights in your Corridors where they belong—

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Pioneers in the Manufacture of Silent Call Systems
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versally. The suggestions submitted are intended only as a guide.

It is impossible to submit a general statement estimating the maintenance expenditures for a hospital of a given size. Maintenance cost will depend upon the age and character of the buildings and the equipment. We must, therefore, content ourselves with averages. In Table II maintenance budgets are given for 100, 200, 300 and 400-bed institutions. The budgets are slightly higher than the average. This is done purposely. Experience has shown that hospitals because of lack of funds allot insufficient amounts to maintenance, regardless of the fact that such expenditures pay large dividends. In Table II it will be noted that the maintenance chief is listed on part time. This is done on the theory that the head of this department will also have charge of the heat, light and power plant and that 50 per cent of his salary will be charged to that department. It will also be noted that a replacement account is listed in addition to the supply account. This account is to have chargeable to it items of extraordinary repair, which the regular maintenance force cannot properly handle, and the replacement of worn-out pieces of equipment.

TABLE III—MECHANICAL SHOP EQUIPMENT

Machine Shop
Anvil
Forge
Lathe, motor driven
Work bench
Blow torch
Gasoline furnace
Lead pot and ladle
Portable electric drill, ½-inch with stand
Bench grinder
Set of machinist's tools
Set of plumber's tools
One-ton chain hoist
Small welding outfit

Electrical Shop
Work bench
Set of electrician's tools

Paint Shop
Complete set painter's brushes
Drying oven (built-in)
Work bench
Floor finishing machine
Set of ladders
Paint spraying equipment

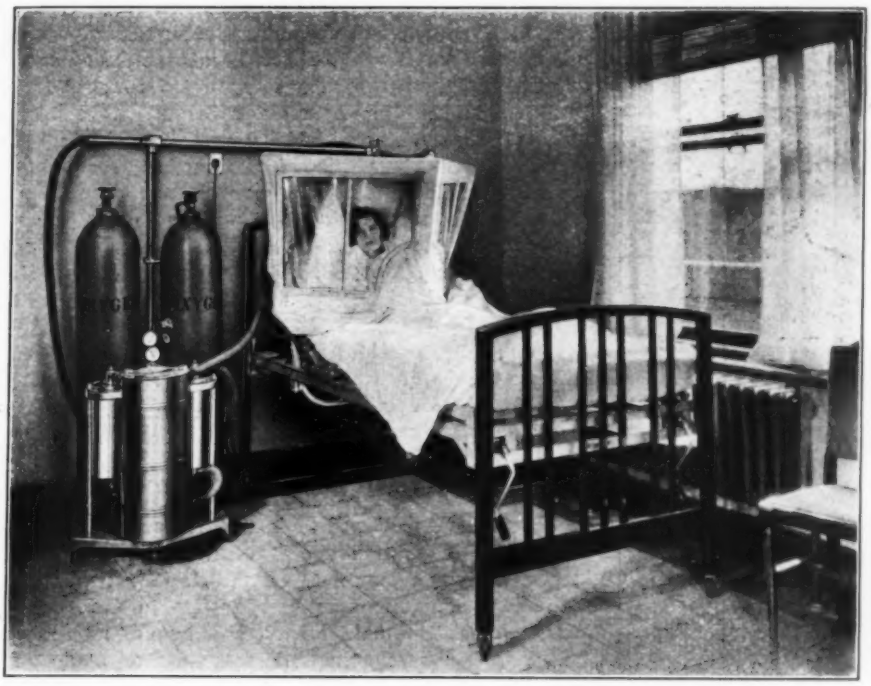
Carpenter Shop
Combination woodworking machine (electrically driven)
Complete set of carpenter's tools
Work bench
Ladders

Groundkeeper's Shop
Tractor with lawn mowing, roller and snow removing device
Sprinkling system
Rubber hose
Shovels and spades

The importance of immediate repair should be impressed upon all the personnel. For instance, nothing is so annoying to a patient as a leaky faucet, and the nurse is apt to overlook this unless the importance of immediate repair is impressed upon her. Recently a hospital engineer told me one of his experiences. He was confined to the hospital following a thyroidectomy and someone failed to close a faucet completely in a near-by utility room. He stated that he suffered more discomfort in the few minutes that the faucet was left dripping than during any other period of his hospital stay. Needless to say, this particular engineer sees to it that a faucet never leaks for long. Requisitions for routine repair should originate daily with the nursing supervisors and department heads, and the principal of nurses in her daily rounds should ascertain whether requisitions have been made for the repair of all broken equipment.

In addition to this routine, the maintenance chief should make regular complete rounds of the building at least once each week, preferably oftener. He should note the general condition of the plaster, paint, floors, radiators, plumbing, electrical installation, woodwork, mechanical equipment and furnishings. He should originate, for

THE RIDGELY OXYGEN THERAPY APPARATUS



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Only one application is necessary as a rule if the work is done thoroughly.

Cuprex is harmless when applied to human beings; does not irritate scratches or inflamed areas, does not injure hair or skin.

No tight-fitting caps or bandages are necessary in the application of Cuprex.

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Samples of Cuprex will be sent to any Hospital Official, Physician or Nurse, upon request. Address Merck & Co., Inc., Dept. J-1, Rahway, N. J.

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the approval of the superintendent, requisitions for the repair of such items as come to his attention. These rounds will serve as a check on the regular system of requisitions and in addition will bring to light many necessary repairs on mechanical equipment, such as faulty joints in the plumbing lines, which the nurse or department head cannot be expected to recognize.

The superintendent should make a practice of occasionally accompanying the engineer on his rounds, or if he prefers, he should make regular inspection of buildings and equipment. This should be done if only to check fire hazards. Even hospitals of the modern fireproof construction should have an organized inspection of this type.

A maintenance department functions to the fullest extent when the letting of repair items to outside firms is reduced to a minimum. No order for repair of buildings or equipment should be let until it has been demonstrated that such repair cannot be economically handled by the regular maintenance force. It is also well to determine whether items of equipment can be constructed by the maintenance force at a lower price than they can be purchased in the open market.

One Way to Save Money

I was recently obliged to install a certain piece of new equipment. Quotations were received and the best price quoted for the equipment was $900. The price seemed unusually high and it was impossible to make the purchase and still remain within the budgetary allowance. The engineer was called, drawings were made of the equipment, a list was prepared of the necessary parts, and a quotation of $74 was made. Four mechanics employed regularly by the hospital constructed this equipment in eighteen hours' working time. This meant that a piece of equipment ordinarily sold for $900 was built by the hospital at slightly over 10 per cent of that amount. In addition, the hospital had a piece of equipment that met its needs more exactly than anything on the market.

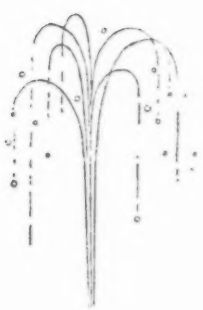
I should, however, like to warn against making a manufacturing plant out of the hospital. It will always be impossible for the hospital to construct a large percentage of its equipment economically, and the main function of a maintenance department is the economical handling of repairs.

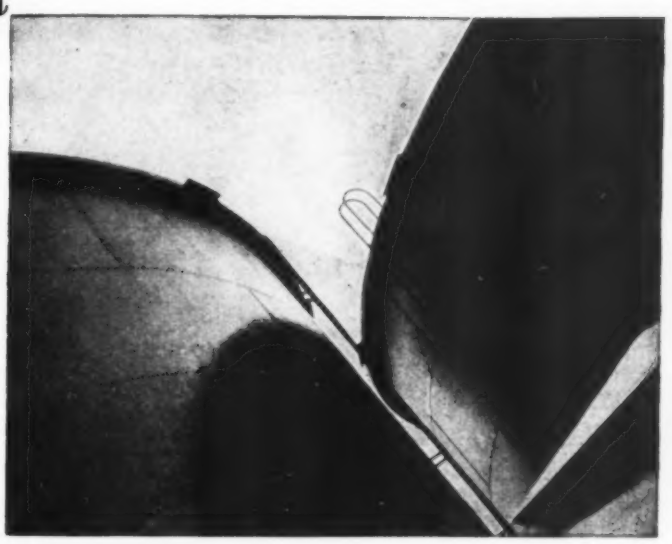
A properly equipped and managed maintenance shop can easily pay for itself many times over. Table III gives a list of equipment that can profitably be installed in any hospital of 150 beds or over. The equipment listed can be purchased for $3,000 and a replacement not to exceed 10 per cent yearly will be necessary. The smaller institutions will find it convenient to combine two or all of the shops.

An important phase of hospital administration that is many times overlooked is the minimizing and elimination of fire hazards. The maintenance chief, being in reality the superintendent of buildings, is the logical person to watch for fire hazards. This is particularly necessary in institutions that are not entirely fireproof. He should be acquainted with the location of all fire fighting equipment. He should regularly inspect standpipe valves and recharge all extinguishers at least once each year. Each extinguisher should be marked with the date of the last recharging. He should see to it that paper and other inflammable waste are not allowed to accumulate. All fire exits should be properly marked and kept clear.

Every hospital should have a prearranged plan of action in case of fire. Many institutions will find the chief engineer or maintenance chief the logical person to take charge and a fire leader on each floor should be appointed.

PEQUOT SHEETS ARE BLEACHED IN PURE ARTESIAN WELL-WATER





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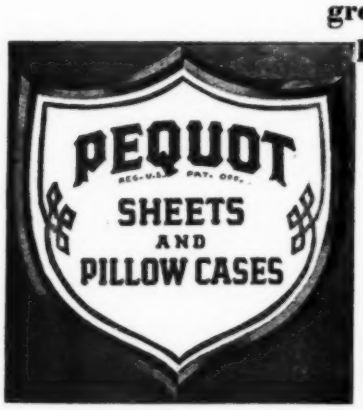

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The well planned hospital is the easiest to maintain. The maintenance problem should therefore be given primary consideration in the planning of all institutions. A well managed force of mechanics with proper equipment and a sufficient budgetary allowance are necessary if the maintenance department is to return the greatest possible dividends. A system of routine repair requisitions, schedule tours of inspection by the maintenance chief and constant supervision by the superintendent are necessary for the conservation of hospital property.

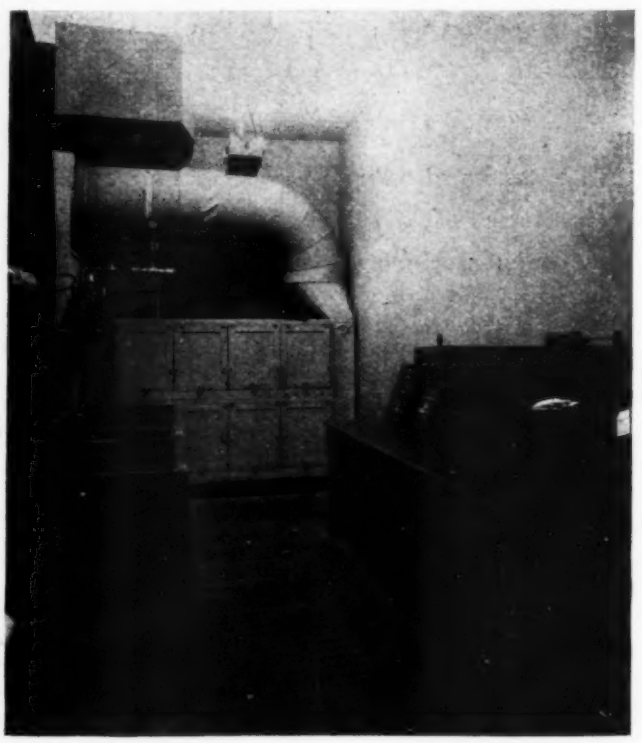
A Film Dryer That Works Rapidly and Efficiently

By BRUCE WHYTE, M.D.
Director, Department of Roentgenology,
Battle Creek Sanitarium, Battle Creek, Mich.

The film dryer that is now in successful use at the Battle Creek Sanitarium, Battle Creek, Mich., was born of the necessity for drying quickly a large number of films during periods of high relative atmospheric humidity.

The dryer was designed and constructed through the joint efforts of E. C. Clay, technician and electrician, and H. G. Bayley, head of the machine shop.

The apparatus not only provides for the rapid drying of films up to its full capacity but it permits the rapid loading and unloading of its eight drying racks. These racks are in two tiers of four compartments each and



a drip pan underlies each tier. Each rack, running on rollers, accommodates nineteen film hangers and holds them rigidly so that swaying is impossible. When a compartment door is lifted and the rack pulled out the door is automatically held up by the rack. The doors, when closed, render the dryer dustproof.

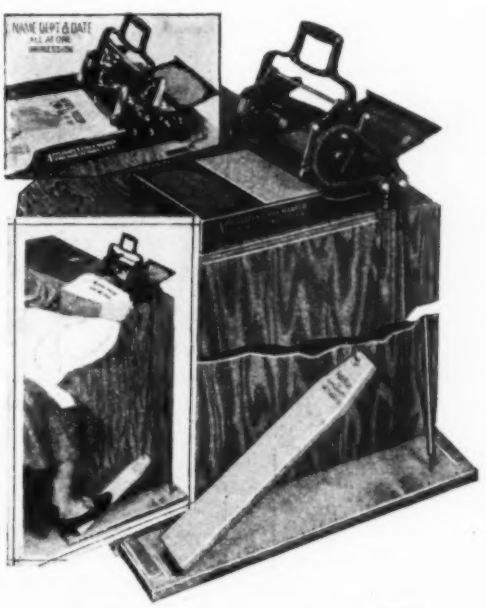
The entire unit is in the rear of the dark room. During cool dry weather, a twenty-four-inch exhaust fan draws ordinary atmospheric air from the dark room and through the dryer and passes it outdoors. During warm and humid weather the air drawn from the dark room is passed through a steam heating element before it

A NEW LINEN MARKER THAT OFFERS A FINER ORDER OF SERVICE, SPEED, SIMPLICITY AND REAL ECONOMY

THE New Applegate Linen Marker for Hand or Foot Power is the most advanced improvement today in this field, yet it is sold at a price that is unbelievably low. It will mark your name, department and date, all at one impression, in any style or size type you like best, and all plates are hand carved from solid metal plate (see the nameplate below) that will last a lifetime. Practically no maintenance cost.

THE APPLEGATE HAND-POWER MARKER

An *entirely new* Marker, durably constructed for a life time of service. Entire body is made in one casting, and all moving parts held in place with triple size cold rolled steel bolts that will never require adjustment. This new Hand Power Marker is convertible into a Foot Power Marker at any time, by merely buying the Foot Power Attachment, $15.00. Always accurate, fast and dependable. Sold at the low cost of only $20.00. Marking dies extra, depending on size and style of letter.



THE APPLEGATE FOOT-POWER MARKER

It is the *new* Hand Power Marker with Foot Power attachment installed.

Both hands are free to hold the linens firmly while marking, and it will mark just as fast as the linens can be fed into it. It is superior to markers costing hundreds of dollars, because the larger name die space (2x6 inches) permits choice of any size or style type, and there is no ink reservoir—or motor—to cause trouble.

This extraordinary Marker is only $35.00. Marking dies extra, depending on size and style of type.

APPLEGATE'S INDELIBLE INK

is a silver-base ink, requiring heat to set it. Markings stay plainly visible the full life of the goods, saving hours and days in sorting, and dollars in protection. The only Ink that is *absolutely indelible.*

SEE THIS UNUSUAL LINEN MARKER AT THE A. H. A. CONVENTION

BOOTH 322

APPLEGATE CHEMICAL CO.
Gentlemen: Please send sample impression slip of size and style of solid metal type.
We are interested in { ☐ Foot Power / ☐ Hand Power } Marker
We now use { ☐ Ink not requiring heat to set it. / ☐ Ink requiring heat to set it.
Name .....
City ..... State .....

APPLEGATE CHEMICAL CO.

5632 HARPER AVENUE

CHICAGO ILLINOIS

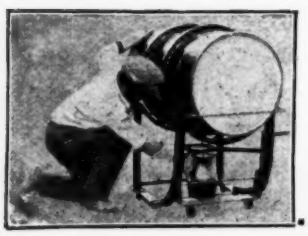
XANNO INDELIBLE INK

does *not* require heat to set it. Can be purchased in Red or Black.

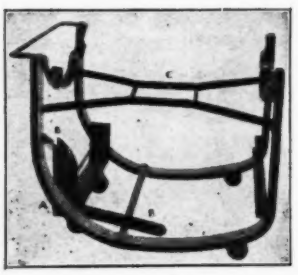
This ink will last several washes longer than any other ink not requiring heat to set it. Our Xanno Remover takes out blots, mistakes and most stains.

Handle Drums, Barrels and Carboys Safely and Easily

WHY subject your nurses, pharmacists, and porters to dangers of acid burns and strains from lifting heavy containers? Schwenk Safety Tilters do away with all that. They save labor and fluids too.



One man does the job in ten seconds time



He *tilts* the drum into position shown. He can truck and rotate it and drain from end or middle bung.

Three to one advantage over lifting—That's why one man does the work of three. Front wheels on receding carriage "B" cannot interfere with rocking surface "A" while drum is being tilted. Carriage locks automatically when drum is in position shown.

NO MORE NEEDLESS LABOR

Drums, barrel, and carboys are difficult and dangerous to handle. Schwenk "ONE MAN" Safety Tilters make the work safe and easy. That is why industrial plants use them wherever heavy containers are handled. That is why hospitals have generally adopted this efficient method when brought to their attention.

Schwenk Carboy Tilter with trucking platform. No hooks to slip or break. Safe and easy to use.

Order Today

Use Schwenk "ONE MAN" Safety Tilters in your drug, alcohol and other departments for 10 days. If they will not do all we claim you may return them. No further obligation.

Send for list of users including leading hospitals. Circular with prices and details on request.

'ONE MAN' SAFETY TILTER

SCHWENK SAFETY DEVICE CORP.
70 East 45th St., New York, N. Y.

traverses the dryer. A regulator on the heating element controls the temperature of the air current. By means of a damper the air may be forced through either tier singly thus shortening considerably the drying time of the contained films. The fact that air is drawn directly from the dark room provides a useful ventilation of this and all other rooms of the department.

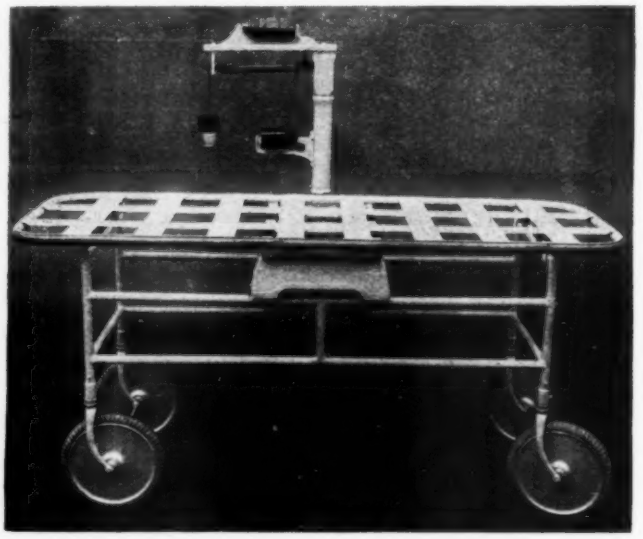
The capacity of the dryer is 152 films. Under ordinary atmospheric conditions this number of films can be dried in one hour. Under the most unfavorable conditions of heat and humidity these films can be dried in two hours. When specially rapid drying is demanded in the case of a few films, they can be dried in thirty minutes by diverting the entire current of heated air through one tier only. The estimated maximum capacity of this dryer is 1,000 films daily.

A Portable Scale for Weighing In-Bed Patients

By MORRIS HINENBURG, M.D.
Assistant Director, Montefiore Hospital, New York City

A scale suitable for weighing in-bed patients is desirable chiefly for the purpose of enabling the hospital staff to study over long periods and with great accuracy the clinical course of edematous patients suffering from cardiac and renal diseases and to provide, in addition, another form of scientific check on the benefits of the various kinds of treatment that are being employed in these cases.

Records of fluid intake and output are inherently subject to error and should not be the only means used of



determining the reaction of the patient to the treatment he is receiving. If in addition to this procedure the weight of an in-bed patient can be taken periodically on the same scale, these two measures will provide a fairly accurate index of progress.

The essentials of such a scale are obvious. First, it must be simple, practical and accurate. It must be substantially constructed yet light enough to be easily handled by one person. The platform of the scale should be as long as, and its height should conform to the height of, the bed, thus permitting the transfer of the patient to the scale and back to bed without discomfort and without undue difficulty for those who are weighing him. Overhead devices for lifting the patient bodily from bed and weighing him have been tried, without success, because the method is complicated, awkward and difficult.

SEPTISOL SOAP AND DISPENSERS

a service and protection to the hospital

HOSPITALS . . . realizing the necessity of absolute surgical cleanliness . . . are rapidly discarding such obsolete wash-room equipment as soap-bar and dish and adopting SEPTISOL SOAP and DISPENSERS.

Manufactured for surgeons' use SEPTISOL is a heavy, concentrated soap in syrup form. It should be diluted in four to five times its volume of water. When so diluted it is ready for use. It eliminates the old fashioned method of dissolving soft-soap and the unsightly, unsanitary soap-bar and dish. Its use gives the hands the feel of complete surgical cleanliness. It cleans the pores . . . lubricates the skin . . . and eliminates danger of infection.

SEPTISOL DISPENSERS are neat and provide an efficient, safe means of dispensing SEPTISOL. They are easily attached to any wall. All metal parts are chromium plated. They are dust proof . . . and can be quickly filled. Foot operated, a slight pressure dispenses just the right amount of soap. This plunger is portable and may be moved about, offering no interference in cleaning or mopping.

The use of SEPTISOL DISPENSERS eliminates the necessity of the surgeon's hands coming in contact with the dispenser. Absolute surgical cleanliness is thus assured. The surgeon is protected against infection.

Septisol Dispensers are licensed free to users of Septisol Surgical Soap

See these DISPENSERS on display at BOOTH 239 A.H.A. CONVENTION

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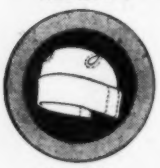
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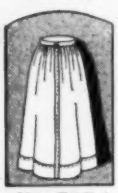
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"Quality standards in materials and workmanship; outstanding values in all garments produced; with a sincere desire to render a real service to the hospital field, are the guiding ideals in our organization."

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NEITZEL MFG. CO. INC., WATERFORD, N.Y.
SPECIALISTS IN
NURSES' APPAREL AND HOSPITAL GARMENTS

Recently a bedside stretcher scale was designed to meet with these requirements in the Montefiore Hospital, New York City. The ordinary springless silk scale calibrated for avoirdupois and metric weights was welded and bolted to a stretcher chassis of the ordinary hospital variety, with the pipe frame designed like the letter H. The stretcher carrier proper was of one piece construction and was mounted on the scale platform with crossbars welded in to reenforce the frame. Two hooks directed downward and inward placed at each end of the stretcher carrier grasped a crossbar on the chassis to prevent tilting by an off-center application of weight, at the same time making it possible to obtain an accurate weight record. The perimeter of the stretcher carrier

was guarded with a continuous rubber bumper. The height of the stretcher carrier was made to conform to the height of the hospital beds, thus making it easy to move the patients.

With two swivel wheels (controlled by a brake) and two stationary 12-inch ball bearing rubber tired wheels the bedside stretcher scale can be moved about by one person with no greater effort than is required to wheel the ordinary stretcher and with less effort than is needed to move the ordinary vertical scale for the ambulatory patient. A 6-inch mattress (which is a standard thickness for stretchers in the Montefiore Hospital) was adjusted to the stretcher carrier by straps. Adjustments in weight for the carrier and the mattress were first made by adding a corresponding quantity of shot to the hollow balance weight. Readings may thus be taken directly without any deductions.

Care must be taken to weigh the patient with the same kind of bed clothes under the same conditions for each reading.

The accompanying illustrations show further details of this scale.

The Technical Advisor Suggests—
"Properly Prepared Processing Powders"

"FAILURE to observe the rules of standardized procedure is the cause of poor radiographic quality. The basis for *standard time-temperature* processing is properly prepared solutions." That's sound advice from the Technical Advisor.

Eastman Prepared X-ray Developer and Fixing Powders are made to take the guesswork out of processing by providing uniformity of the chemical content of the solutions at all times.

Like Eastman *Contrast* X-ray Film, they are made under the watchful eyes of the scientific staff of Kodak Research Laboratories. They are packed to reach you right and bring you a uniformity and time-saving convenience that will effect an economy and improve your radiographic results.

There is a complete line of Eastman products to facilitate time-temperature processing—Safelights, Safelight Lamps, Indirect Light-Boxes, Tank Thermometers, X-ray Timers, and Developing Hangers are carried in stock by your dealer. You may have a copy of the "Eastman X-ray Tank Developing System Chart" by mailing the coupon below.

Eastman Kodak Company, *Medical Division*
343 State Street, Rochester, N. Y.

Gentlemen:

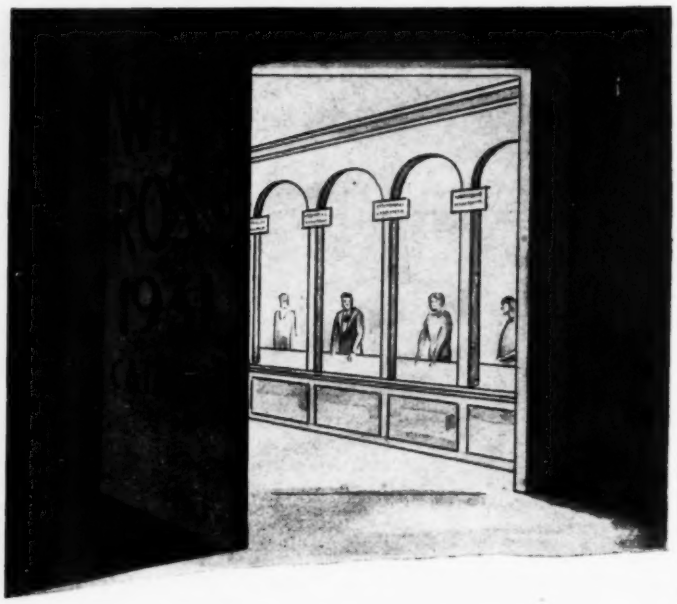
Please send your "X-ray Tank Developing System Chart" to assist me in establishing the *time-temperature* method of development, without obligation, of course.

Institution .....

Name of Individual .....

Street and Number .....

City and State .....



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WILL ROSS, INC., 457-59 E. Water St., Milwaukee, Wis.

WILL ROSS INCORPORATED HOSPITAL SUPPLIES

A Linen Marker That May Be Run by Either Foot or Hand Power

A new linen marker that may be operated with either hand or foot power is now available at a reasonable cost. The foot power attachment, which may be purchased separately, makes possible the use of both hands in the marking of linens. The machine will mark linens as fast as they can be fed into it.

The entire body of the marker is made in one casting.

The linen marker, with the foot power attachment in place, is shown in operation here. The machine will mark linens as fast as they are fed into it.

All moving parts are held in place with triple size cold rolled steel bolts.

The machine will mark the hospital's name, the department and the date, all at one impression, in any style or size desired. All plates are hand carved from solid metal plate.

A Special Cart That Serves Many Purposes

To prevent its wheel chairs from being used to transport all kinds of transportable articles about the hospital, Peter Bent Brigham Hospital, Boston, has devised a special cart, which is described in the *American Journal of Nursing*. This cart is used for carrying linens, soiled linens, blankets, basins and water and similar materials. A small enclosed shelf for urine specimens has been provided on the lower portion of the cart and adds to its usefulness.

The cart is made of steel pipe and rail fittings. It is 5½ feet high, 4 feet 4 inches long and 2 feet wide. The frame extends above the platform which is made of half-inch ash slats. The cart is equipped with two stationary and two swivel plate, 8-inch rubber tired wheels. The frame is finished with aluminum paint which gives the cart a nice appearance.